

NAVAL AVIATION

# NEWS

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40th Year of Publication

JULY 1959

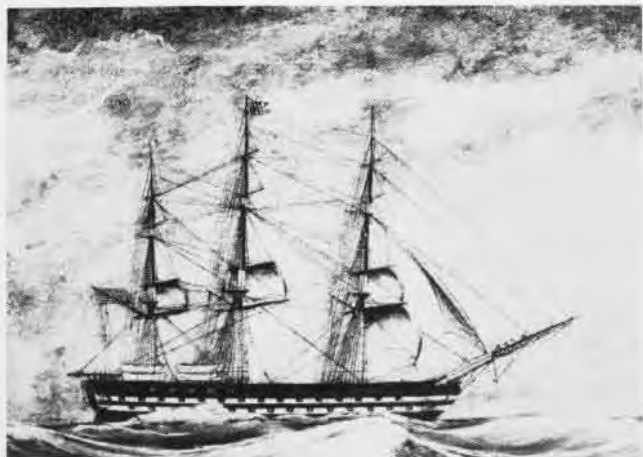
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# NAVAL AVIATION NEWS

OUR FORTIETH YEAR OF CONTINUOUS PUBLICATION, JULY 1959

## Polaris Plans Announced Navy, Lockheed Team for Support

Technical supervision of work at the Polaris Navy Weapons Annex of the Naval Ammunition Depot, Charleston, will be performed by the Lockheed Missiles and Space Division. The Annex will process and issue Polaris missiles to fleet ballistic missile subs.

Cdr. Harry Cox has been designated as the first officer in charge of the unit which will supply administrative and support functions. Naval personnel will assist in readying the missiles for fleet use.

The Navy-Lockheed team of trained missile specialists will permit the earliest possible introduction of Polaris into fleet use.

This unique user-producer combination will assure maximum readiness and utility in providing Polaris missiles aboard nuclear-powered submarines.

## Beech Wins Competition Mach II Target-Missile in Offing

The Navy and Air Force announced that Beech Aircraft Corporation, Wichita, Kansas, has won a joint competition for a new high speed missile-target, designed to meet the requirements of both services. It will have speed and altitude performance which matches the capabilities of enemy threat aircraft, and is planned for operational use in 1962.

Designated the KD2B-1, the new vehicle fills a need for an air-launched, low cost, high speed, expendable missile-target for training interceptor and fighter pilots who will be firing radar-guided or heat-seeking air-to-air missiles. The Navy also plans to use it in connection with ship-launched air defense missiles.

KD2B-1 will be capable of level flight at any predetermined altitude from 5000 to 70,000 feet. Flight duration can be five minutes at Mach 2, or



DRAWING OF NAVY-USAF MISSILE-TARGET

eight minutes at Mach 1.5. A self-contained guidance system allows the target to seek its pre-set altitudes and speeds for fighter pilot training. It will have a simple hit or miss scoring system and a self-destruction system.

The award was made to Beech after detailed evaluation of design proposals submitted by 18 guided missile and aircraft manufacturers. A developmental contract will follow soon.



RADM. R. D. HOGLE, ComCarDiv 18, broke his flag on board the USS Randolph. Honors marked the ship's conversion from attack to support carrier status. Capt. J. B. Tibbets CVS-15 C.O., welcomed the Admiral and staff.

## A4D-2's Span the Atlantic Use 'Buddy' Refueling in Flight

Two A4D-2 Skyhawk jets from the Second Marine Aircraft Wing spanned the Atlantic in a little over five hours. This was the first flight of a single-engine jet across the ocean using the "buddy" system of in-flight refueling. The flight covered a 2270-mile span from Argentina, Newfoundland, to NAS ROTA, Spain.

Led by Col. Homer G. Hutchinson, who was accompanied by 1st Lt. George N. Bailey, Jr., the flight was made to evaluate the A4D-2's long-range self-supporting aerial staging capability which permits Marine Corps deployment of its attack aircraft to any corner of the world.

The A4D-2's were refueled in flight by other A4D-2's equipped with Buddy Stores slung on their external racks.

The A4D-2 jet is the smallest and lightest U.S. jet-powered combat aircraft. It carries either atomic weapons or various conventional weapons.

## Flatley Memorial Trophy To be Given for Carrier Safety

The annual "Admiral Flatley Memorial Award" for outstanding safety in carrier aviation honors the late VAdm. James H. Flatley, Jr.

The memorial citation, to be accompanied by a trophy, will go to an attack or anti-submarine warfare carrier judged to be the outstanding flattop in accident prevention. It will be retained in temporary custody by the winner.

The trophy will be presented each August to the winning carrier. North American Aviation, Inc. sponsors the award. Ships will be nominated for the award by the commander of the Naval Aviation Safety Center.

Adm. Flatley, who died on 9 July 1958, was director of the Air Warfare Division, Office of Naval Operations.

## 500th Crusader Delivered Trophy Winner First Flew in 1955

The 500th FSU *Crusader* has been delivered to the Navy, only four years after the first flight of the trophy-winning aircraft in 1955.

Number 500 was an F8U-2, a speedier version of the F8U-1 which is operational in the Sixth and Seventh Fleets.

## Neptunes Blast Ice Jams Alaska Villages Saved from Flood

P2V crewmen of Heavy Attack Mining Squadron 10 dropped 14 500-pound bombs on ice jams which threatened to flood villages along the Aniak River in Alaska.

Direct hits were made on locations marked by Army helicopters. Between *Neptune* bomb runs, Army demolition teams, flown in by helicopter, attacked the ice with dynamite charges.

The Air Force flew in additional fuel for the Army helicopters.

At the end of the first day's bombing, large cracks began to appear on the ice. Soon the jams up-ended, rising 25 to 30 feet in places.

Ed Fortier, acting Civil Defense director, said the bomb hits averted immediate danger of floods.

A second call for assistance came two days later and the *Neptunes* took

off again. This time the trouble spot was the Yukon River, some 150 miles north of Fairbanks.

Navy men were over the jams shortly after daybreak. They reported that all buildings in the village were flooded. Bombs they dropped were successful in breaking up the ice jam.

## Thetis Bay Reclassified Becomes Amphibious Assault Ship

The *Thetis Bay*, an assault helicopter aircraft carrier, became the Navy's third active Amphibious Assault Ship when it was reclassified as LPH-6 on May 28.

Two former support aircraft carriers, *Boxer* and *Princeton*, have already been designated LPH-4 and LPH-5, respectively.

*Thetis Bay* will require no additional structural modifications to become an assault ship. Smaller than *Boxer* or *Princeton*, *Thetis Bay* displaces 7600 tons, is 512 feet in length, and has a beam of 65 feet. Her maximum width is 108 feet.

The ship will have an allowance of more than 2000 men, including crew, air group and amphibious troops. She can carry 15 helicopters.

Amphibious assault ships are designed to implement the Marine Corps' "vertical envelopment" tactic, which

allows helicopter-borne troops to bypass enemy beachheads and hit behind the lines.

The first amphibious assault ship to be built from the keel up, *Two Jima* (LPH-2) is under construction at Puget Sound Naval Shipyard. She is to join the fleet in late 1961 or early 1962.

The keel of another assault ship, LPH-3, will be laid at the Philadelphia Naval Shipyard sometime in 1960.

## VF(AW)-3 Wins USAF 'A' Equivalent of Navy 'E' Award

It's news when a squadron wins an "E," but it's something different



USAF 'A' AWARDED TO NORAD SQUADRON

when a Navy squadron wins the Air Force equivalent, the USAF's "A." VF(AW)-3 who is responsible for the air defense of southern California serves with the North American Air Defense Command (NORAD). The coveted "A" award was made in ceremonies at Oxnard AF Base, California.

Shown with the "A" pennant in front of one of the squadron's F4D *Skyrays* are: H. G. Hynd, Vice President and General Manager of Douglas Aircraft Co.; BGen. Prescott M. Spicer, 27th Air Division, USAF Defense Command; Capt. Howard P. Ady, Jr., Commanding VF(AW)-3; and E. H. Heinemann, Douglas expert on Combat Engineering Systems.

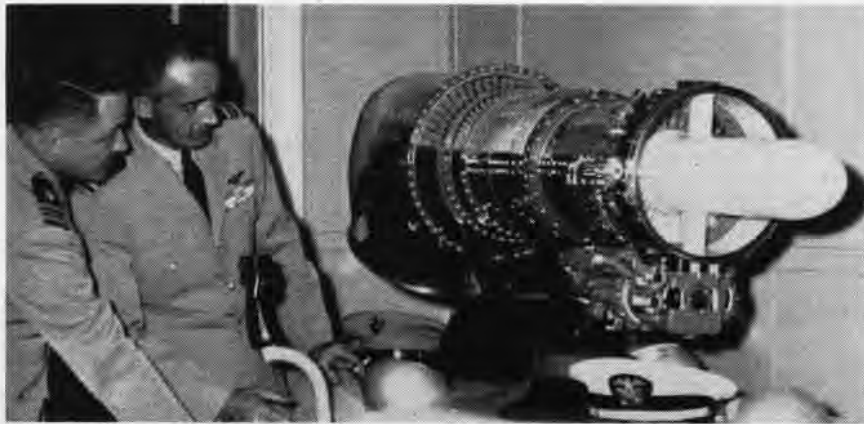
## 38,000th Landing Logged Flown by VAW-12 Pilot in Guppy

Ltjg. Thomas P. Taylor of Carrier Airborne Early Warning Squadron 12 made the 38,000th landing aboard USS *Lake Champlain*, CVS-39. He flew an AD-5W Early Warning *Guppy*.

The ship's 37,000th landing was also made by a VAW-12 pilot last year.



THE USS BENNINGTON, CVA-20, is headed for a new chapter in her career. The attack carrier, who had her first encounter with the enemy in WW II on 19 February 1945 when she participated in support strikes over *Two Jima*, is slated for the yards in October for conversion to a CVS in readiness for her coming anti-submarine mission. At the end of 1955 and early 1956, the *Bennington* was the first CVA in the Far East with angled deck and mirror landing system.



**THE EIGHTH ANNUAL** General Aviation Technical Training Conference at NAS Memphis, Tenn., sponsored by the Chief of Naval Operations, was opened by RAdm. Fitzhugh Lee, Chief of Naval Air Technical Training and host of the conference. Assistant Secretary of the Navy for Personnel and Reserve Forces, the Honorable Richard Jackson, spoke on the needs imposed on training by the development of today's highly sophisticated weapons for defense. Nearly 200 delegates

attended the conference which covered the wide field of technology and training. Representatives of the Bureau of Aeronautics, RAdm. C. T. Booth and Capt. A. L. Gurney, and Capt. A. S. James, OPNAV, spoke. At left, LCdr. W. N. Sims and LCdr. J. H. Brandenburg of the CNATechTra staff, study a jet engine display. At right, VAdm. R. B. Pirie, DCNO(Air) closed the three-day conference, stressing the importance of improved techniques and skilled men in a state of readiness.



## Encourage Language Study Adm. Hopwood Urges Proficiency

"Comment allez-vous?" "Ni How Ma?" "Ikaga Desu Ka?" Answer glibly how you are, if you understand French, Chinese, and Japanese.

Naval personnel with lingual aplomb is the aim of Adm. Herbert G. Hopwood, Commander in Chief of the U. S. Pacific Fleet. He has issued instructions to all commanders in the fleet to emphasize and extend the use of foreign languages by U. S. Navy officers and enlisted personnel.

Adm. Hopwood believes that there is a tendency for U. S. citizens to avoid the effort to become proficient in foreign languages. He therefore wants commanders to encourage personnel to acquire language skills and to use them to the limits of their ability and to become acquainted with the language of the host country so that they can converse with its citizens.

Adm. Hopwood believes that personnel in ships deployed in the Western Pacific should learn at least the phrases of greeting and courtesy in the national language of the ports being visited.

## Another Super Superlative Old #04711 Is Still Flying

Invariably we get bloodied up a bit when a piece of peerless prose treats of persons or things being "first, fastest, most, highest or only." Here it is again and this time its an "oldest" type of chronicle. It is sponsored by the Naval

Air Technical Training Center, Jax.

Quote: Naval Air Technical Training Center, Jacksonville, keeps reenlistments at high level. This month Capt. Charles L. Moore, Jr., NATTC's C.O., shipped over a "career Navy" Beechcraft, NAS JAX's 04711. This extension will give "Beechy" 20 years active duty.

Accepted by the Navy at Anacostia, D. C., in May 1941, the craft began to "see the world." In 18 years service it has had 18 duty stations, many in South America, including Panama and Bogota, Colombia, and has seen sea duty on the USS *Antietam* (CVS-36).

The little Beechcraft has needed only two major overhauls. After a thorough physical, specialists recommended it for reenlistment.

"Beechy" changed his rate in January 1952, converting from JRB-2 to SNB-5. Now stationed at NAS JACKSONVILLE, it is still set aside for the use of NATTC pilots' proficiency flights.



OLD 711 RECEIVED THOROUGH PHYSICAL

The plane itself has logged over a million miles in more than 7500 hours since being accepted.

Like a good Navy careerman, there are no disciplinary Captain's Masts in 04711's service file. Eighteen years with no major accidents is a record any flyer could be proud of.

Now if it keeps its nose clean and doesn't get busted (up) in the next two years it will be eligible for full retirement benefits.

Maybe we'll be sideboys when they pipe 711 over the side for retirement. Unquote. Know of one that's older?

## Capt. Privette Scores VAW-11 Skipper Lands 500 Times

A Navy pilot whose first carrier landing was made aboard the old USS *Yorktown* in 1937, made his 500th carrier landing recently on the *Hancock*.

Capt. William G. Privette, Jr., commanding officer of Airborne Early Warning Squadron 11 at NAS NORTH ISLAND set this mark. All his landings were made in single-engine planes while attached to operating squadrons.

The near record was brought about by post-dinner wardroom conversation aboard the *Hancock*, in which Capt. Privette remarked to the *Hancock* commanding officer, Capt. H. L. Miller, that he had made 498 carrier landings. Capt. Miller, who was commander of Carrier Air Group 6 in which Capt. Privette served during World War II, invited him to make it an even 500 in one of VAW-11's AD-5W *Guppies*.



# GRAMPAW PETTIBONE

## Fuel Fools

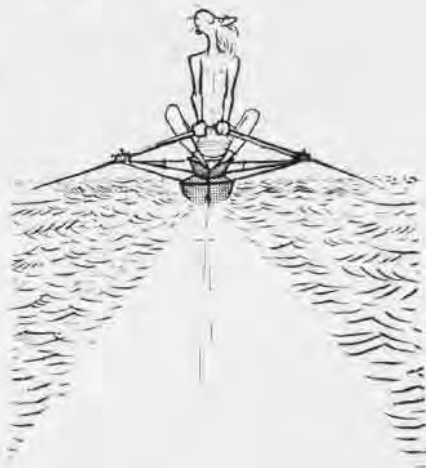
After an RON in Seattle, a couple of 52F pilots filed IFR on the return portion of a cross-country navigation hop from NAS SEATTLE to NAS NORTH ISLAND. Normally the distance is too great for a single hop, so their flight-planned first leg was to NAS LOS ALAMITOS for a refueling stop.

The weather was a little rugged and some icing was encountered, but they picked up a 30-knot tailwind which they hadn't figured on, and broke out in the clear over Sacramento, California. Things looked pretty good to them so they cancelled their IFR plan and refiled VFR to NAS LOS ALAMITOS, cruising at 6000 feet.

Just before they reached Long Beach, both fuel low level warning lights came on. Ignoring this indication, the two pilots decided to try for NAS NORTH ISLAND, some 80 miles distant by airways, but a little closer by the over-water direct route. They refiled VFR with an estimate of 20 minutes to their destination, proceeding by direct route.

With the fuel gauge reading 50 lbs.

Osborn



the starboard engine quit. Since they were over water the pilot headed for the beach. As he completed the turn the port engine also coughed and quit. The copilot broadcast a *Mayday* and put the IFF on *Emergency*.

They were given a steer to the

Oceanside Municipal Airport, but because of some low clouds, they didn't spot it until they were at 800 feet and in a bad position to make the runway. A green, flat, but not too large farmer's field was spotted, so the pilot made a wheels-up landing, wings level, nose up, and stopped in approximately 350 feet from touchdown. Result: Overhaul damage to the 52F, no injuries but red faces for its occupants.



*Grampaw Pettibone says:*

Two cases in just a few months of this type of foolhardy knot-headedness has strained my blood pressure to a point where I'll never make my next annual physical! This pair of fuel fools are the type you see hiking down the expressways every morning during the rush hour with a gas can in hand. Just can't spare the time to fuel up. Switching from IFR to VFR doesn't release you one bit from the fuel reserve requirements specified for VFR flight in OPNAV Instruction 3710.7A.

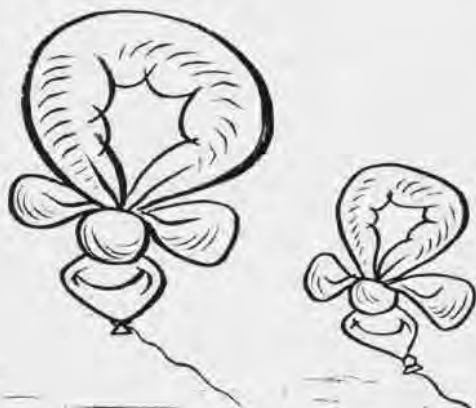
## Knothead

A stake truck, parked near the hangar overnight and with the keys in the ignition, was appropriated by an Airman for an unauthorized trip to the barracks. Returning with two passengers in the cab, he drove onto the aircraft parking ramp at an estimated speed of 20 mph and ran into a parked T-28. The driver continued on, parked the truck, and did NOT report the accident! It took 300 man hours to repair the aircraft damage.



*Grampaw Pettibone says:*

How stupid can you get! This man is the kind of knothead we can't afford to have within the boundary fence of the airfield! Fortunately, the damage was pretty apparent, for hidden, unreported damage could take a pilot right out of the livin', walkin', talkin' group. I'd transfer this guy right out of aviation. He's a real hazard. After all, the world is full of cactus, but we don't have to sit on it!



Two Knotheads are we ...  
Drifting happily along on our  
EMPTY think-tanks!

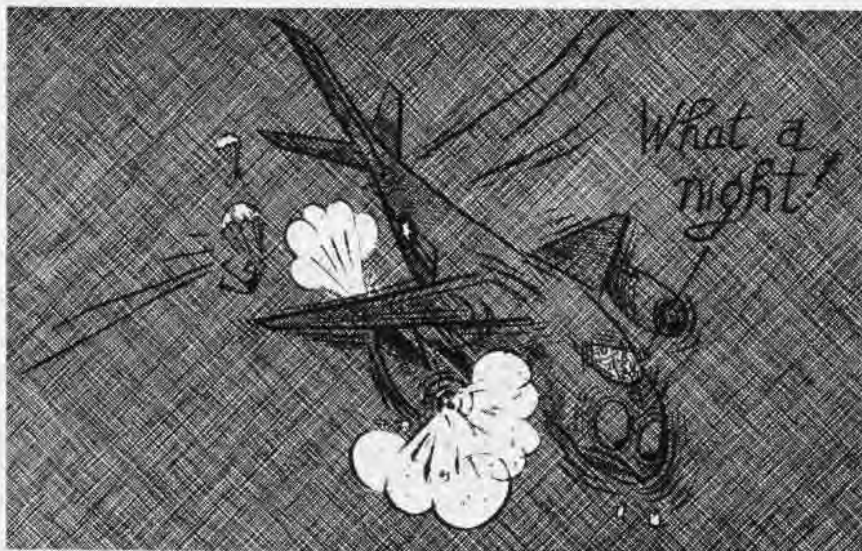
## Nose Heavy

An S2F-2 roared down the runway for takeoff. As the airspeed hit 90 knots the pilot eased back on the yoke and tried to break ground with the nosewheel. It remained glued on and the speed continued to build. At 120 knots, over half way down the runway and rolling on all three wheels, he still couldn't pull the nose up, so he aborted, dropped the hook, and made an uneventful pickup of the runway arresting gear.



**Grampaw Pettibone says:**

There just ain't no substitute for studyin' the pilot's handbook and usin' the check off list. This pilot admitted he used 5° nose down elevator trim tab. Now this is O.K. for the S2F-1 but the S2F-2 uses a 0° tab setting. This outfit better make sure their check off lists have got all the dope on 'em, especially when the lads are flyin' two different models.



rate. The pilot, alarmed at what seemed an impending structural failure, alerted the crew for bail-out.

Vibration had become so severe that he couldn't read the instruments. He eased off power on both engines and simultaneously heard the plane captain report the starboard engine on fire. The engine was shut down just as it seemed to explode and they felt a violent yaw to the right, flames shooting out of both the intake and tail pipe of the engine.

The A3D had lost altitude down to 30,000 feet when the pilot blew the escape chute door and ordered a bailout.

The ADU's went off the line at this time and all control boost and electrical power were lost. All instrument lights went off, leaving only the cabin dome light.

The two crewmen bailed out and the bombardier-navigator attempted to go. After extreme difficulty in getting out of the seat, he found himself entangled in the aircraft oxygen supply hose and returned to his seat, calmed down, and continued his efforts to break free.

Meanwhile the A3D, out of control, was in a steep descending spiral to the right. The pilot shut down the port engine and prepared to bail out. He held back when he saw the B/N still struggling to get out of his seat.

As he hesitated, the A3D seemed to be leveling off and speed seemed to be diminishing. Quickly swinging back to the controls he restarted the port engine, and as the ADU's came back

on the line and the instrument lights flashed on, he found he was climbing through 12,000 foot level. The starboard engine fire had gone out.

Ordering the B/N to stay with it, the pilot reconnected oxygen and radio equipment and established contact with the nearest ARTC activity. Their answer was garbled, so shifting IFF to emergency, he called a *Mayday* and was promptly answered loud and clear by an Air Force GCA unit, which vectored him to a nearby Air Force base for a safe landing. Both aircrewmembers were recovered with only minor injuries sustained in the bailouts.



**Grampaw Pettibone says:**

Gosh all fishhooks! A lot happened here in a short time and after pulling a boner which gave him a big fat compressor stall, more luck than the average man is entitled to possess pulled him out of it.

This pilot by rights should have got rid of his crew in about 20 seconds or less when he ordered the bailout. Investigation disclosed that only the plane captain had an actual bailout drill in the A3D and that a year ago! All four had received extensive classroom instruction on the subject, but this can't compare with actual practice. There isn't an outfit operating that doesn't have at least one plane down for maintenance or AOCIP and available for drills. When the chips are down and things get a little tight, then practice pays off. To gloss over *THIS* phase of training with excuses is foolhardy. You could end up a long time dead!

## Gramps' Advice to the Airborne

**Four most useless things in aviation:**

- The altitude above you
- The runway behind you
- The airspeed you had
- The fuel you dumped

## Bail Out

An A3D-2 was cruising at 37,000 feet on a routine night NAV hop. With an outside air temp of -55° C, it was making a true air speed of about 380 knots, but was a little over on the fuel estimate. The wing fuel transfer switch had been on for 20 minutes with no indication of fuel transfer, and the pilot was a little worried.

The plane captain stated that a check of the fuel system circuit breakers required de-pressurization and suggested the pilot first rock the wings in an attempt to start the fuel transfer. The pilot agreed to try. He dropped first the left wing and then the right about 30°. At this time, the A3D began to vibrate steadily and at an increasing



**INTERPRETIVE REPORT ON ASW . . . . .**

# **ALPHABET CONSPIRACY AGAINST ENEMY SUBS**

"The Soviet submarine threat is one of the most serious military threats to our national security today, and it is becoming more and more important as the capabilities of submarines continue to advance."—Admiral Arleigh Burke.

All elements of our Navy's Operating Forces will play important roles in meeting this threat. Our Attack Carrier Striking Forces will be in the forefront as we carry the offensive into the enemy's sources of Naval power—his submarine building and repair facilities, his yards, and his supporting installations ashore or afloat. Other forces of the Fleet have the primary job of hunting down and destroying enemy submarines in

the open seas. These have become known as our ASW forces. The best example of these specially trained forces can be found in the Anti-Submarine Defense Force, U. S. Atlantic Fleet.

At Norfolk, NANews interviewed VAdm. William G. Cooper, ComASDFLant, RAdm. John S. Thach, Commander of Antisubmarine Defense Group Alfa, and several subordinate ASW commanders to learn how ASDeFor fits into the fleet framework.

One thing we learned was that ASW is too big a story to tell in one issue. So we decided to break the story down into three installments.

Our first interview was with VAdm. Cooper.



**Q. When did the Soviet submarine threat first begin to come into sharp focus?**

**A.** The most significant naval development since World War II has been the rise of the Soviet Navy to second place—from the standpoint of size—among the world's naval powers. The really serious aspect of this development is, of course, their emphasis on submarines. Although this was a build-up over a period of years, you could say that it came into sharp focus in the year 1956, when their submarine construction rate reached 100 ships per year. Today, they have about 450 operational submarines—an undersea fleet of unprecedented peacetime size and an obvious threat to the Free World's control of the seas.

**Q. What has been done to combat the threat?**

**A.** The Navy has paid close attention to this Soviet naval build-up. With respect to their submarines, it was apparent that this force would be principally—not entirely, but principally—a threat to Atlantic "lifelines" between the U. S. and Western Europe. In 1956, Admiral Jerauld Wright, Commander in Chief of the Atlantic Fleet, directed that extensive studies be undertaken, looking toward improved antisubmarine warfare readiness in the Fleet.

The principal result of these studies was establishment in July 1957 of the Antisubmarine Defense Force—ASDF.

This new command, although it absorbed the former "AntiSubLant," was based on a new concept of centralized authority and responsibility for carrying out the major defensive missions of the Atlantic Fleet. Our primary interest is, of course, antisubmarine warfare.

The forces assigned to AsDeForLant included the Fleet's four antisubmarine carrier groups. Other Fleet units having ASW capabilities—destroyers, submarines and patrol aircraft—are assigned for specific operations or for Fleet exercises.

An example of how this command has improved our ASW readiness is in the field of what we call "contact investigation." This is the job assigned to us of investigating reports of unidentified submarines. Such reports may come in from any source—but what is important is that we now have a centralized organization and "ready" ASW units to check these reports out. It is a 24-hour-a-day job. We keep at least one hunter-killer group at sea at all times. We regularly run surveillance flights by VP aircraft over the Western Atlantic. We have patrol planes and destroyers in an "alert" status at several locations.

**W**E SUPERVISE or conduct all advanced Fleet ASW exercises. This ties in as another aspect of our job—training. And we keep in very close touch with the Type Commanders with regard to ASW readiness of their respective type forces.

The Atlantic Barrier is also a part of AsDeForLant. This force is commanded by RAdm. W. I. Martin, with headquarters at Argentia, Nfld. The Atlantic Barrier, which extends in a southeasterly direction from Argentia, is formed by radar equipped WV-2's and DER's. These ships

and planes do a tremendous job year-round. Essentially, the Barrier forms a seaward extension of the continental early warning lines, and has a primary mission of air early warning. Reports of unidentified aircraft spotted by the Barrier reach us here in Norfolk very quickly and the information is in the hands of the air defense people within a very few minutes.

**Q. If war came tomorrow, what ASW missions would be initiated by your command, Admiral?**

**A.** Well, that gets a little complicated. There are a number of limited war situations, as well as the general war, in which ASW forces would be necessary. Let's assume we're talking about a general war in which the U. S. and the Soviet Union are opponents and that the Soviet submarines are committed. This means we would be facing a very large number of modern snorkel submarines—primarily a threat against ships at sea.

**S**HOULD THOSE circumstances arise, just about the entire Atlantic Fleet would be involved in the ASW fight. The attack carrier striking forces would attack the enemy's sub bases, his logistic and support facilities, and we hope these strikes would substantially reduce the numbers of subs we would have to dispose of elsewhere. At least these attacks would pretty well make the enemy's sub effort a "one shot" proposition, since his subs would have no bases to go home to after their first war patrol.

Then we would get the subs as they traveled from their bases enroute to the open Atlantic. We would place barriers of our own killer subs and our aircraft across restricted passages such as the Denmark Strait and the Iceland-U.K. "gap." We would back up these barriers with hunter-killer groups. Although we now give the Soviet sub force only a limited capability as missile-launchers, we would have to provide a defense against such attack on the U. S. This would mean ASW forces at sea off our coast as well as land-based air patrols. Our harbor defenses would be increased, too.

Our most important mission in a war today would be the protection of merchant shipping at sea. The Navy would establish a Control of Shipping organization and begin a convoy system, and we would provide protection for the convoys.

If the NATO Allied Command Atlantic plans were implemented, we could easily move into that role, since we are now organized to do so. I believe it is important to understand that the other NATO nations are also quite concerned about the Soviet sub threat, and several of them are directing their naval efforts principally toward ASW. The U. S. would not be alone in this fight by any means. A great benefit of NATO is that the member nations would fight this war on a closely coordinated basis—a really combined effort—and our potential effectiveness would therefore be substantially increased.

**Q. How did the "ABC" task groups come about?**

**A.** In the Spring of last year, Admiral Burke came to Norfolk for talks with Fleet commanders on how to improve our ASW readiness. The idea for Task Group Alfa came up during those talks. Bravo and Charlie came later.



NEPTUNE OF VP-8 BEGINS SUB SEARCH WITH ITS ASW EQUIPMENT



CARRIER-BASED TRACKER FLIES OUT TO HELP CEMENT THE CONTACT



GETTING CLOSER, ASW HELICOPTERS ARE LAUNCHED FROM CARRIER

At the time of those talks, one aspect of the readiness picture in ASW was that we could never bring any one group up to maximum effectiveness because members of the group—the carrier, the destroyers, and air units—were being periodically rotated. A hunter-killer group, for example, might work together for several months and reach a good level of teamwork, then the destroyer squadron might be due for a tour in the Med and the air squadrons might be replaced, so training had to start all over again.

**A** SIMILE would be a football coach who takes a team through spring training, then in September, finds he has to play the regular season with an entire new squad.

To solve this problem, Admiral Burke directed that we put a "team" together and keep them together until we found out just how good we could become at ASW with the hardware we have on hand. This "team" was Alfa, with RAdm. John S. Thach, ComCarDiv 16, as "quarterback."

The job done by Alfa was so promising that, in October, Admiral Wright established Antisubmarine Defense Group Bravo, another hunter-killer group, under RAdm. R. J. Stroh, ComCarDiv 14, and Antisubmarine Defense Group Charlie, a destroyer-VP convoy escort team, under Commander Destroyer Flotilla Two, RAdm. L. M. Mustin.

The key word in the mission assigned to each of these groups is "accelerate"—*accelerate* the development of ASW tactics, doctrine and procedures in order to improve the ASW readiness of the Atlantic Fleet.

"But why not get the details from the people who do the job?" said Admiral Cooper. "You're in luck. Alfa is in port. Go talk to Admiral Thach and his people." We did.

Waiting for a commanding officers' conference to break up in the Admiral's cabin, we interviewed several members of Admiral Thach's staff. Of Cdr. Bernard A. Lienhard, plans officer, we asked:

**Q. How does Alfa operate?**

A. Normally we are on a two-and-two cycle; two weeks at sea training and two weeks in port. Sometimes the schedule is interrupted when we have to break away from a training problem and race off to investigate a contact.

Usually we begin the exercise with a basic problem to break in new people. Then we work into a more advanced technique, and finally we run a large scale exercise.

**Q. Describe a typical problem.**

A. A visual contact is made by aircraft; let's say one of the *Neptunes* of VP-8. The pilot reports the sighting and commences tactics which include the use of sonobuoys and magnetic anomaly detection (MAD). Promptly, carrier-based S2F *Trackers* are launched for the area, helicopters are sent in to get their dipping sonar gear into the water, and destroyers are dispatched to help strengthen the contact.

**W**E MAY, in the meantime, station *Sea Leopard* and *Cubera*, our ASW submarines, in the best position to regain contact with their superior listening equipment in case the target submarine breaks contact with the aircraft and destroyers; or we may send *Sea Leopard* and *Cubera* directly into the contact area to lock on the target with the aircraft, helicopters and destroyers.

**Q. In what respect has the greatest progress been made?**

A. In teamwork. All the units work as part of a coordinated team, not as individual stars. Each unit has something no other unit possesses. We have learned how to use the strengths of one to compensate for the weaknesses of the other. You might say that Admiral Thach has taken several heterogeneous units and formed them into a homogeneous mass. The result has been greater effectiveness and much higher esprit de corps.

Besides some advances that have been made in detection equipment and weapons, this fusing of units accounts for most of our successes to date. Instead of saying, "This is *my* job," the unit commanders are saying, "This is *our* job."

The messenger arrived to say Admiral Thach was free. We went into his flag cabin to ask these questions:

**Q. What is the present state of the art in anti-submarine warfare, Admiral Thach?**

A. It is not yet a success story. The problem has not been solved by a long shot. We have made a great deal of progress, however. We still have a long way to go.

**S**HOULD similar progress have been made in other military fields, I have no doubt but that it would have been called extraordinary. But we had so far to go to catch up, and there has been so much progress made in the capability of submarines, we have not yet bridged the gap. If subs would stand still, our job would be a lot easier. If we had made routine improvement in ASW we'd be way behind. It takes a lot of progress merely to keep up.

**Q. Admiral, you became famous for a fighter plane tactic called the Thach Weave. How much of this kind of ingenuity have you brought to anti-submarine warfare?**

A. Now don't give *me* credit for ideas that have come from my staff and the other people in Task Group Alfa.

In fighter tactics it was a matter of recognizing the limitations of the planes we had and developing ways to get the most out of what we had. There was a lot of sky to cover in the Pacific and we had to exploit our capabilities to the Nth degree. In the Thach Weave, we developed a sort of 'flying wedge' which depended on precise timing.

Now I can't give you specific details on tactical improvements we have made in ASW because the questions you most want answered would give comfort to the Soviets. But we have used the same approach: Get the most you can from the tools you've got to work with.

Just as in fighter plane tactics, quick reaction assumes prime importance in ASW—getting the right force to the right place at the right time.

By spreading out what we've got, by closing in properly at the right time (like closing the fingers of a hand to trap an insect, he gestured), and by using the right weapon, we have improved our ability to find and hold a submarine with the equipment we have.

This business requires the most complex tactics of all warfare. It alone involves three dimensions; hunting from the air, from the surface, and from below the surface. Against one submarine we use five vehicles—long-ranged patrol planes, carrier-based search planes, helicopters, surface ships, and submarines.

The p2v can get to the contact fast and this is important.



VALLEY FORGE REMAINS IN BACKGROUND AS COPTERS ENTER FRAY



HOVERING OVER CONTACT, H5-7 COPTER LOWERS ITS DIP SONAR



IN COORDINATED SEARCH, TRACKERS AND H55-1'S PINPOINT SUB



'WHEN DESTROYERS GET THERE, WE'VE GOT A GAFF IN HIS GILLS'

The slower S2F has detection advantages over the P2V because it can fly lower and make tighter turns. The helicopter has the advantage of hovering and lowering a sonar ball and it can move rather quickly to shift search areas.

Yet we feel the contact is never really solid until the destroyer arrives on the scene with its superior sonar and staying power. The submarine's advantage as a hunter derives from the fact that the pursuer is on equal footing with the pursued.

So we try to get the most from each unit without competing with the other units. Tactically, one of the biggest strides we have made is in overcoming some of the "bad manners" that were observed in the old days when one skipper tried to kill the sub all by himself.

The best way I can explain the effectiveness of our coordinated attack is to compare the units of Task Group Alfa to five slices of a pie. We can assume that each unit has an inherent value of One. Working singly, the five arms of the group would have a total value of Five. That would be an arithmetical progression. But when we fuse the best of each, and fill the gaps of one with the strengths of another by juggling the slices of the pie, we come up with a capability that is no longer an arithmetical total. It assumes geometric proportions.

**Q. How did you go about developing this effective teamwork when aviators, destroyermen and submariners have traditionally felt a strong individuality and unit pride?**

A. First of all, it is not hard to convince people that a change of thinking is necessary when the outcome of the game could very likely be the nation's survival. I made sure every unit commander and every man in each crew got this message when Task Group Alfa was first formed.

Next we developed the weapons system concept. We now consider our destroyers, for example, in the same light that a battleship captain might once have considered his main battery; our search planes in the light that he might have considered his radar. When each captain began to recognize how his unit meshed into the ASW weapons system, he began to consider his unit as a fraction of the system.

Very frequently nowadays I hear destroyer captains talking about "our airplanes," and submariners talking about "our destroyers." The idea has taken hold.

**Q. What do you consider the biggest problem areas?**

A. There are many. First there is the rapid progress that is being made in submarines. They have changed from conventional to snorkel to nuclear within a few years while detection equipment has not progressed at anything like a comparable rate. Secondly, classification of a contact. In a cold war the big job is not merely detecting and tracking, but identification. We must be sure it is a submarine, not a whale or a knuckle in the water, or a school of fish. Should the cold war become hot, classification would still be important, for the expense of weapons is extremely high. We can't afford the dollar costs of wasting a lot of expensive weapons on false targets.

**Q. How can you be sure you won't kill our own subs?**

A. Using our procedures, the system is as foolproof as any system ever devised. Still it is no more foolproof than the frailties of human judgment. However, if our rules are followed, our forces won't be hurt.

**Q. Many people think ASW is dull and monotonous as compared to some of the more glamorous aspects of jet and space-age warfare. But how do you feel about this, Admiral?**

A. I couldn't disagree more. First, the seriousness of the submarine menace cannot be exaggerated. Second, there is a great thrill to be experienced in finding and killing a submarine. In this sense, good ASW is like good fishing. The prey is big game. When we pick up the sub with the P2V's MAD gear and sonobuoys we've got a 200-pound marlin on an eight-pound-test line. When the S2F's arrive we've got another line on him. The helicopters get there and the line is strengthened even more. When the destroyers and killer submarines arrive, we've got a strong gaff in his gills. The fish must be played just right until we can get the gaff in him. ASW is an art in that sense.

**Q. You made a public plea for ideas that would make ASW more effective. What has been the response?**

A. The response has been magnificent. At latest count the Navy had received some 1700 suggestions and I have had additional letters. On an average, one in every 200 suggestions shows some promise. An expert in these matters told me that the proportion of good ideas to total ideas is higher than the one in 400 that can usually be expected. I cannot tell you what the more promising suggestions have been, any more than I can spell out our tactics, but we are very happy with the response.

Also, every time we put to sea, we have industry representatives embarked, from big firms and small ones. They are studying our equipment problems constantly.

I cannot minimize the serious need we have for better detection and identification equipment and I cannot guess where the best ideas will come from. It is very possible that an old idea in another walk of life will be the new one we need for a major breakthrough in ASW.

**Q. What has been the fleet's response to your way of hunting submarines?**

A. We get a lot of requests from fleet units, especially destroyers and submarines, and from Naval Air Reservists, asking permission to operate with Alfa, Bravo and Charlie. We are always pleased to have them work with us.

**Q. We hear strange terms arise when ASW is being discussed. What is meant by "Cross Pollination" and "Drop the other shoe?"**

A. When we started out with Alfa we decided it was necessary for the officers and men of one unit to understand the problems of all the other units. Therefore we put some destroyer people in submarines, some submariners in airplanes and some aviators in subs and destroyers. It has worked out well. We gained a new respect for each other by using this process of cross-pollination of manpower.

As to "Drop the other shoe," you're getting into tactics. Simply, we have developed some gimmicks designed to wear on the nerves of the sub skipper by not always doing what he expects us to do. One of our tools is suspense. It's like the man in the lower apartment hearing his upstairs neighbor drop one shoe. He lies in bed waiting to hear the other shoe fall. When it does not fall, he becomes nervous. We do the same thing with the sub—half of what he expects us to do. When he gets too curious and comes up to find out what we're doing, we drop the other shoe.

*In the next installment we will continue the informative ASW story in the vernacular of a carrier skipper, an instructor at the ASW Tactical School, the Executive Officer of an Alfa killer sub, the squadron commander of Alfa's destroyers, and the skippers of Patrol Squadron Eight, Air ASW Squadron 36, and Helicopter ASW Squadron Seven.*

# MIDSHIPMEN'S AIR CRUISE

MIDSHIPMEN of Annapolis are traveling again this summer to the Naval Air Basic Training Command and the Pensacola area to participate in the Aviation Indoctrination Course.

They are scheduled in three groups. The first arrived at NAS PENSACOLA on June 19, the second will arrive on July 14, and the third on August 7.

The Pensacola phase of the course will take the midshipmen to the four corners of CNABATRA, involving more than 200 flight instructors and some 50 ground school instructors.

Thirteen prominent aircraft and missile manufacturers will send representatives to Pensacola to familiarize the midshipmen in the latest techniques and advances in aircraft and space research.

In addition to the well-rounded course of instruction, the midshipmen participate in an extensive syllabus consisting of 11 flight hours in all the training aircraft assigned to the Basic Training Command.

The midshipmen will be required to "go up" in the low pressure chamber. While in the chamber they will be taught how to use oxygen and will be shown the effects of hypoxia and how critical the oxygen supply is in the upper atmosphere.

The group will be taught bail out techniques for high performance aircraft by utilizing the ejection seat trainer. The School of Aviation Medicine will also go into specific details on the mechanics of space research being carried on in the laboratory.

Lectures are being planned to bring the midshipmen up to date on the space story. On the agenda will be full coverage of the full pressure flight suit that is being used in the fleet at the present, a modification of which will be used in our future space fleet.

Included in the tour of the Naval Air Basic Training Command is the large Overhaul and Repair Center where the middies will see the complete process of overhaul and repair of aircraft that have been in the fleet.

The U. S. Naval School of Pre-Flight will present a survival course using the "Dilbert Dunker." The midshipmen will get their first feel of an aircraft as "Dilbert" slides down the rails, hits the water and flips over on its back, simu-

lating an aircraft landing in the water and turning over.

At the famed survival exhibit, groups of midshipmen will be shown how a downed Naval Aviator can set up housekeeping in the rough.

Highlighting the tour will be a performance by the Navy's famed flight demonstration team, the *Blue Angels*. After the show the *Blue Angels* will have informal discussions with the middies.

Climax of this combined effort to illustrate Naval Air Power, with emphasis on training and safety, is a five-day cruise on the USS *Antietam*.

## Pilots Train at Quonset Learn Maintenance of A4D Skyhawk

Armed with bulging notebooks, well-worn coveralls, technical know-how and practical experience, four enthusiastic young Naval Aviators joined their squadrons after completing a six-month course in A4D aircraft maintenance at NAS QUONSET POINT.

Ens. Robert J. Bournique reported to VA-72 at NAS OCEANA. The rest, Ens. Roger A. Johnson, William D. Lewis and James W. Tabb, were assigned to Cecil Field squadrons VA-46, VA-36 and VA-106 respectively.

Directed by the Chief of the Bureau of Aeronautics to prepare a program

for training officers in the maintenance of *Skyhawks*, Capt. Thomas B. Payne, commanding officer, and Capt. Frank E. Rogozienski, O&R officer, set the program in motion at Quonset. Lt. Mahlon S. Huff, O&R administrative group officer, and Mr. Joseph Wilhelm, master mechanic, prepared the curriculum, which followed BUAER suggestions for study in all aspects of the A4D airframe, power plant, electronics and ordnance.

A former plane captain, now a senior inspector for aircraft discrepancies, commented: "I have observed and taught these young officers in the jet calibration area and it was a pleasure to see them work out problems. Like seasoned mechanics they got the A4D's ready for flight, checked pilot discrepancy sheets when the jets returned, and made necessary adjustments."

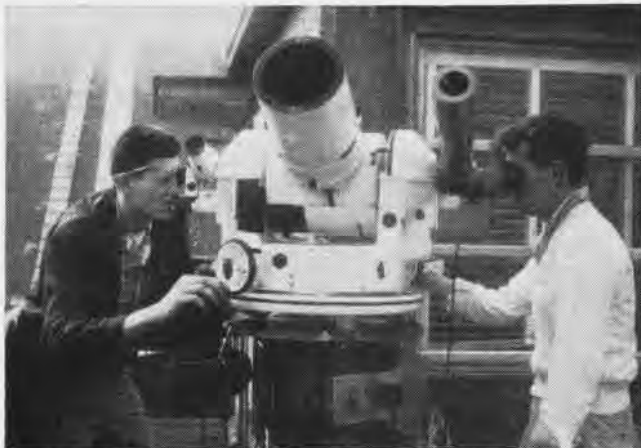
## Sara Celebrates #22,000 VF-32 Crusader Catches the Wire

The 22,000th landing was recorded aboard the USS *Saratoga* during carrier qualifications in the Caribbean when Ens. K. H. Stringer landed his F8U-1. He is attached to Fighter Squadron 32.

The *Saratoga* left its home port of Mayport, Florida, the middle of April for post-overhaul shakedown cruise while qualifying pilots from CVG-3. The super carrier is scheduled to return to the Mediterranean area with the Sixth Fleet late this summer.



**HELICOPTER ANTI-SUBMARINE** Squadron Three had a two-month spring cruise aboard the USS *Tarawa* (CVS-40). While in New York City, the *Tarawa* and HS-3 helped celebrate the 10th anniversary of the North Atlantic Treaty Organization by conducting an open house. At sea, in conjunction with VS-27 and Detachment 38 of VA(AW)-12, HS-3 participated in anti-submarine warfare tactics and training. The squadron's success was marked by a grade of 93.26.



THEODOLITE TRACKS PLANE TO LEARN POSITION DURING BOMB RUN



OSCILLOGRAPH MAGAZINE TAPES OUTPUT OF ELECTRICAL SYSTEM

# BRAINS BEHIND FIRE CONTROL

A HIGH PERFORMANCE Navy jet makes a bomb, missile or gunnery run over the Chesapeake Bay. Cameras record every movement made by the attacking plane and its target. Object of the flight is to test the accuracy of the plane's fire control equipment.

Back at the Armament Test Division of the Naval Air Test Center, Patuxent River, film is removed from the cameras and handed to the two dozen physicists, statisticians, mathematicians and assistants whose job is to reduce the images to facts.

First step is to edit the film and convert the images to data which can be fed into a computer. In the projection room, azimuth and elevation readings are recorded on a data sheet. Distance of the object photographed, with respect to a cross-hair on the film, is measured, with fire control readings.

DATA EVALUATION UNIT TRANSCRIBES INFO



DATARON TRANSLATES COMPUTER'S OUTPUT

This information is transferred to paper tape to be fed into a computer which can perform 400 additions and subtractions, 100 multiplications, or 80 divisions in one second.

The paper tape containing information on the evaluation flight is fed into the computer's photoelectric reader, numbers appearing horizontally and

ADD-PUNCH PREPARES TAPE FOR COMPUTER



words vertically. The reader interprets data as electrical impulses. These impulses are stored on the drum (memory device), along with instructions for the computer to follow in solving the problem.

The computer immediately starts making solutions and the results appear as perforations on another tape which, in turn, is put through a flexwriter that produces a typed copy.

James Weston heads the Assessment House Department, and William Kelly is in charge of the computers.

Their teams of experts can solve in 30 minutes fire control problems which would require a single skilled mathematician three weeks to master.

Result: Modifications, if necessary, to provide the Navy's aircraft with the best possible fire control systems — and in the shortest time.

DATA SHEET MARKED IN PROJECTION ROOM



# LET'S LOOK AT THE RECORD

## S2F-3 Flown First Time Insures Greater Comfort for Crew

The Navy's new anti-submarine plane, Grumman S2F-3, completed its first flight 20 May. The S2F-3 resembles its predecessor, the S2F-1 *Tracker*.



NEW GRUMMAN S2F-3 ON ITS FIRST FLIGHT

However, the new model houses the most modern developments in anti-submarine warfare electronics and armament.

Its fuselage is longer than the earlier *Tracker's* to provide the additional space needed for the equipment and to offer added crew comfort.

## 'Going UP with VR-1' Pamphlet Earns Letter of Praise

Fleet Tactical Support Squadron One, based at NAS PATUXENT RIVER, operates transport type aircraft throughout the United States as well as overseas. Recently, the squadron put in use aboard its planes passenger information pamphlets entitled, "Going UP with VR-1."

The 10-page booklet earned a Letter of Appreciation from RAdm. C. C. Kirkpatrick, Chief of Information. Written by squadron personnel, it answers questions most frequently asked by passengers, and includes a chart showing the routes and mileages most flown by the R4Y and R6D aircraft.

Adm. Kirkpatrick's letter states: "Efforts of this type to present the Command story to so vast an audience as reached by this pamphlet are truly commendable. Well done." It should reach about 3000 people each month.



**FIVE PETTY OFFICERS** of VAH-5, NAS Sanford, read the news of their coming promotion to Ensign in the Navy LDO program: Standing, A. E. Campbell, E. A. Zak, H. R. Ferguson, E. P. Szczyller; seated, T. R. Walton.

## VMF-334 Claims Record 14 Crusaders Fly 108 Hrs. in Day

Marine Fighter Squadron 334 claimed a new record when its pilots logged 108.2 hours in F8U-1 *Crusaders* in a single day's training at Yuma, Arizona. Fourteen aircraft were employed. Capt. Hal Vincent made the final landing.

While at the desert station, the El Toro-based squadron practiced aerial tactics, rocketry, air-to-air gunnery and other phases of training.



**VF-91 PILOTS** flying F8U-1's scored 1354 hits out of 15,302 rounds at Fallon. Pilots who made 71 hits (17.1%) at 20,000 feet were: (L-R) Ltjg. R. P. Rice, LCdr. Dale Kimble, Ltjg. Millard Word and Ltjg. Jack Daniel.

## VW-15 Flies Long Patrols Racks up 1000 Hours in April

VW-15 on its North Atlantic patrols racked up a squadron total of over 1000 hours in April. Several crews totalled more than 100 hours fighting adverse weather over the frigid, iceberg-filled North Atlantic. Crew No. Nine with LCdr. M. M. Nelson as Patrol Plane commander, registered 107 hours.

Individual honors for flight time go to Ltjg. Mazzola who accumulated 130 hours. Most of this time was obtained in 12 and 13-hour segments as he did his job of navigating and flying.



**LOTS OF WIRE!** These fourteen Sausley Field instructors attached to Basic Training Group Five have recorded a total of 1794 carrier landings in T-28C's aboard the USS *Antietam* while qualifying Naval Aviators. All are centurions. Front (L to R): LCdrs. V. D. Brockman; K. L. Brown; L. A. Dewing, Group Commander and high man with 202 landings; Maj. R. G. Scribner, Ass't Group Commander; Lt. E. P. Lorge; LCdr. M. L. Seiper; (rear) Lts. D. O'Rourke; W. A. Lott; J. A. Whittier; T. R. Coleman; R. G. Taipale; R. B. Arnold; D. C. Coe; R. F. McLangblin.

# CVG-7 MAKES A GREAT TEAM



**IMPORTANT MEMBERS** of CVG-7 are the A4D Skyhawks of VA-86 and VA-27. This one will be taken to hangar deck on deck-edge elevator.



**ONE OF VAH-1'S** Douglas A3D Skywarriors is raised to the deck of the new USS Independence to add fighting strength to its varied arsenal.



**FIRST AIRCRAFT** catapulted from CVA-62 was a McDonnell F3H-2 Demon on April 27 with Cdr. H. C. MacKnight, VF-41 C.O., as pilot.



**THIS DRAMATIC** shot of an A4D being launched from the big carrier suggests the power and speed of this aircraft needed for attack.

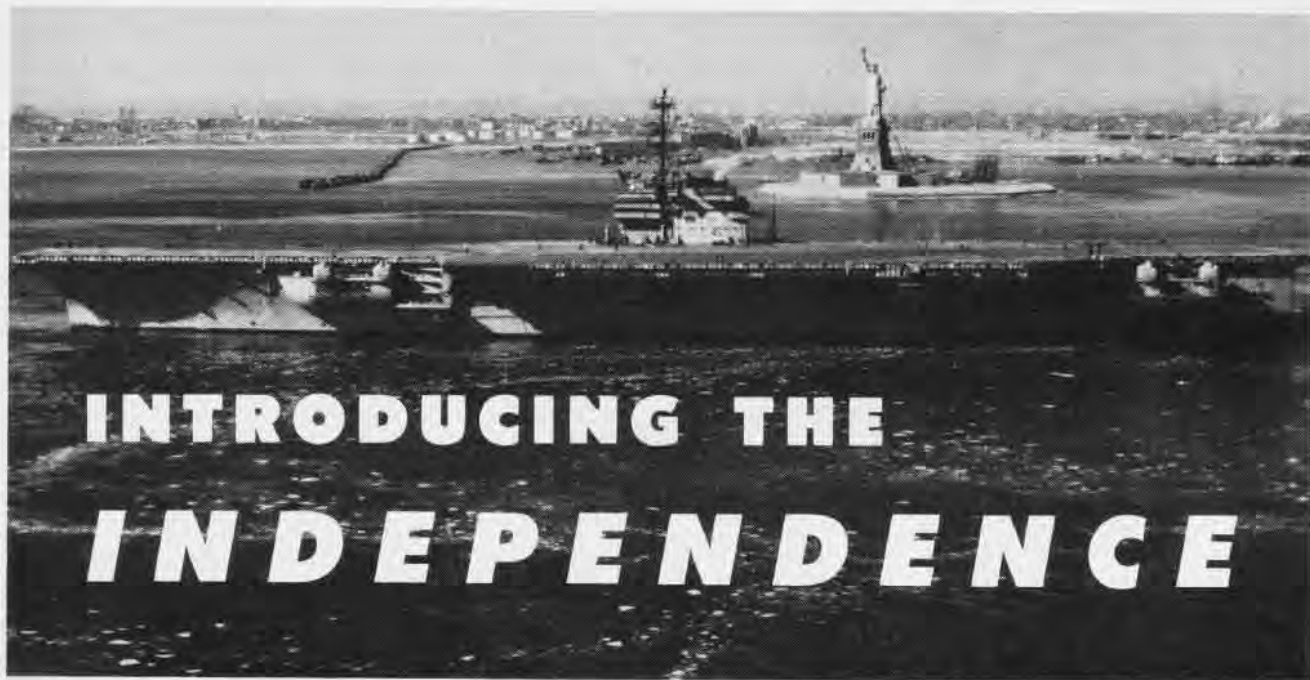


**BUT NOT ALL** the aircraft are Navy's fast jets. Wherever there are air operations, helicopters are on hand for transport and A/S rescue.



**TONGUE** of flame sears deflector plate as Demon pilot applies full power for cat shot. Crew stands ready to position second aircraft.





# INTRODUCING THE INDEPENDENCE

FOR JULY, the word is Independence. Annually, on the Fourth, Americans from Bangor to Burbank pay tribute to their heritage of freedom with patriotic celebrations.

This year the United States Navy, dedicated to the preservation of liberty, welcomed to its active lists, the USS *Independence*, CVA-62. With its speed, strength and striking power, this super-carrier symbolizes with particular significance the position of the United States among the peace-loving nations of the world. It is fitting that we spotlight the newest addition to Naval Air Seapower.

The *Independence*, which has completed its shakedown in the Caribbean, was commissioned on January 10th at New York Naval Shipyard. Fourth in the series of *Forrestal*-class carriers and fifth ship of the U. S. Navy to bear the honorable name, it is truly a floating metropolis, as well as a mobile weapons system. To more than 3500 men, it is both home and office. To the Free World it is a portable air base which can be used in its behalf over the seven seas whenever there are crises that demand unity of action.

The CVA-62 is the embodiment of the technological advances that have been made in the past 183 years. It is an unbelievably far cry from any of the former ships with the same name, but the valiant spirit of the men who serve aboard has remained unchanged.

First in the line was a Revolutionary War sloop of 10-guns. The second was a 74-gun warship built in Boston and added to the fleet in 1815. Number three was a transport used by the Navy for a short time after WW I.

Affiliation with the Air Navy came about during the Second World War. As CVL-22, USS *Independence* (#4) was the first carrier converted from a

cruiser hull. Commissioned in January 1943, she had a long and battle-scarred career that took her to every war zone in the Pacific, where she performed with distinction. From 1946 to 1951, she was used in atomic bomb tests and radioactive research until sunk off the California Coast in experiments with new aerial and underwater weapons.

The gargantuan statistics on the latest in the line speak for themselves. *Independence* is as long as an 89-story building is high; her extreme width is 252 feet, or enough to comfortably accommodate SS *America* and SS *United States* placed side by side. More than 57,000 tons of steel—115,232,295 pounds to be exact—went into the building, and about 300,000 gallons of paint were used. Thousands of miles of piping, wiring and tubing form the intricate, vital network that keeps the ship functioning.

The flight deck is 1046 feet long or the distance of three and one-half football fields. Total working area for flight operations comes to over six acres, including the hangar deck. At least 100 aircraft can be handled aboard. During operations at sea, *Independence's* four steam catapults can launch four planes within 60 seconds. Powerful hydraulic arresting cables will stop 70,000 pound jets 150 feet after they hit the deck at better than 100 miles per hour. There are four deck-edge elevators, one boat and aircraft crane and one aircraft engine crane. The upper decks are equipped with fueling stations.

The ship's two anchors weigh 30 tons each, with 2160 feet of chain. The rudders are equal to the floor area of a two-bedroom house and weigh 45 tons; propeller blades are inscribed in a circle having a diameter of 21 feet.



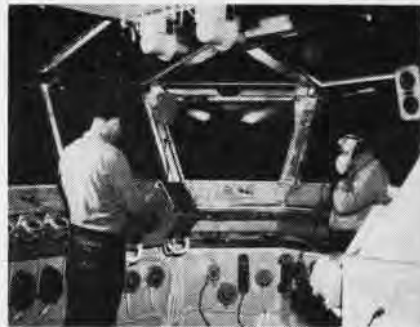
THIS YOUNG HELMSMAN DOES A MAN'S JOB



PART OF GLASS-ED-IN AREA OF MAIN BRIDGE



OFFICERS PLOT COURSE OF INDEPENDENCE



ENCLOSED PRI-FLIGHT CONTROL OVERHANG



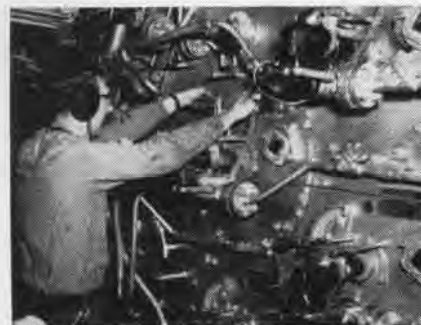
CONTROL CONSOLE FOR NIGHT FLIGHT OPS



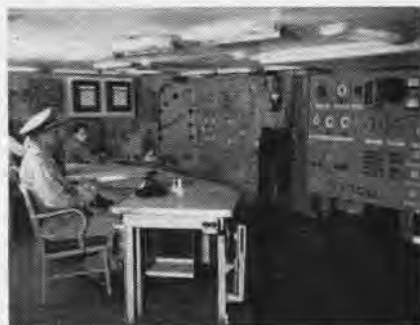
AIR TARGETS ON THE CIC PLOTTING BOARD



RADAR REPEATER FOR THE FLY PLOT BRIDGE



ENGINE ROOM WATCH CHECKS ON A BOILER



ENGINEER HAS VIEW OF ALL ENGINE GAUGES



RADIOMEN IN CENTRAL COMMUNICATIONS

SHIP COMMISSIONINGS are traditionally stirring occasions for sea-going men. When the event places a super-carrier into active service, the ceremony becomes proportionately more meaningful. It is a grand-scale operation.

Months before the actual date, the majority of officers and men receive orders to form the prospective ship's company. From the moment each individual gets the word, he assumes a different identity. His life and living are thereafter geared to his future environment.

Old hands in the Navy knew that orders to USS *Independence* would entail long hours of hard work, ironing out the bugs inherent in every new ship. The realization did nothing to diminish the instinctive pride at being associated with the biggest and most modern carrier in the fleet. Experience had taught them the satisfaction that comes from devoting all their efforts to make it the best ship in the Navy. To the uninitiated, duty aboard the CVA-62 promised unprecedented adventure. Salts and boots alike felt anticipation and a resurgence of the motivations that brought them into the Navy in the first place.

*Independence* was the first ship in her class to have two-

thirds of her 3500-man crew receive special instructions at the Fleet Training Center, Newport, R. I. Between October and December 1958, there were more than 2000 men enrolled in the school. The balance comprised a nucleus of rated personnel and officers with carrier experience. They proceeded to the New York Naval Shipyard to handle the myriad of details involved in preparing a ship for commissioning. By Saturday, January 10th all were ready and eager to make the transition to active status.

At the impressive ceremonies Secretary of the Navy, Thomas S. Gates, Jr. (now Deputy Secretary of Defense) was present, and Mrs. Gates served as the ship's sponsor. Adm. Arleigh Burke, the Chief of Naval Operations, also participated. The ship was delivered by RAdm. S. N. Pyne, Commander, New York Naval Shipyard, and accepted for commissioning by RAdm. C. C. Wood, Commandant, Third Naval District, who read the commissioning orders.

After the playing of the National Anthem and the hoisting of the colors, Capt. Rhodam Y. McElroy assumed command. The executive officer, Cdr. Damon W. Cooper, set the first watch. CVA-62 achieved its "independence."

**T**HE SPIRIT of *Independence* was early demonstrated. The first issue of the ship's newspaper "hit the stands" very shortly after commissioning. It is appropriately called *The Declaration*. A busy routine was quickly established. Fitting out commenced in earnest.

On 2 February 1959 the huge carrier left its berth to get underway for the first time. When the sturdy tugs turned back, she was headed out to sea for three days of builders' trials. One novelty of the ship, a hinged mast, was soon put to use in order to clear the bridges leaving port. Going under the Brooklyn Bridge, *Independence* had under seven feet to spare. Only five feet of water flowed between keel and river bed.

New York's skyline gradually disappeared as she went past the Statue of Liberty, through the Narrows, into the Atlantic Ocean to go through her paces in her natural environment. On 5 February, the ship returned to Brooklyn and made the claim that the trials were among the most successful ever made by an attack carrier.

The next few weeks were devoted to the serious business of getting ready for acceptance trials, which took place in March and proved the CVA-62 a seaworthy ship.

April was the big month. USS *Independence* put to sea. Destination: Guantanamo Bay, Cuba; Mission: shakedown training. The first stop was Norfolk, which is the ship's homeport. Carrier Air Group Seven was welcomed aboard. The fighting entity of the carrier was complete.

Trained and primed, CVG-7, headed by Cdr. William C. Reinhardt, includes the latest aircraft and weapons as an essential component of the Navy's mobile power for peace.

Six squadrons and two detachments make up the air



NO LONGER IN OPEN, LOOKOUT CHECKS HORIZON FROM ENCLOSURE

group. Fighter Squadron 11, one of the Navy's oldest and most distinguished units, flies the 1000 mile an hour plus *Crusader*. Commanded by Cdr. H. H. Skidmore, the *Red Rippers* were formed in 1927, and are based at Cecil Field.

The all-weather fighters are the *Black Aces* of VF-41 with F3H-2 *Demons*. Led by Cdr. H. C. MacKnight, the squadron's mission is to intercept and destroy enemy aircraft during all conditions of weather and visibility in order to establish and maintain local air superiority. The primary weapons are *Sidewinder* and *Sparrow III* missiles. When ashore Fighting Forty-One is located at NAS OCEANA.

Four outfits handle the attack responsibilities. Flying the largest carrier-based aircraft, the mighty A3D *Skywarrior*, VAH-1 is commanded by Cdr. Sidney N. Barney. The 70,000-pound plane is used for long-range missions, both night and day, and is all-weather configured.

Boasting the smallest attack aircraft are VA-86 and VA-72 with the A4D *Skyhawk*. Fast, deadly, and versatile the Mighty Midget can carry both conventional and nuclear weapons. CVG-7's squadrons know how to use them. On their last visit to Gitmo, the *Sidewinders* of VA-86 earned a total of 33 E's. Under Cdr. R. F. Schall's direction, they are aiming for new highs during this trip. Cdr. J. K. Beling's men have also piled up quite an impressive record.

Skipped by Cdr. Charles Anderson, Attack Squadron-75 is equipped with the venerable and reliable AD-6 *Skyraider*.

The Early Warning Squadron-12 Detachment uses the AD-6 *Guppy* for reconnaissance work. The huge belly, which differentiates it from standard *Skyraiders*, houses the special radar gear. LCdr. James Tuckey is officer-in-charge of the VAW-12 group.

Using a specially configured *Crusader*, the F8U-1P, a detachment from Light Photographic Squadron 62 is also embarked, commanded by Lt. Larry Stapp. The photofighter carries no armament. Its primary defense is speed.

Carrier Air Group Seven, a mighty arsenal of men, aircraft and armament aboard USS *Independence*, provides strong protection to the security of the United States. The combination is a weapons system capable of delivering a devastating nuclear attack or a precise conventional attack. As part of the Navy's carrier task force, Carrier Air Group Seven plays a vital role in warding off future aggression.



ON THE INDEPENDENCE, EVERYTHING IS BIG—SO ARE BINOCULARS



WORD IS PASSED ON SHIPWIDE HOOK-UP



CUBICLES FOR EACH MAN'S TOILET ITEMS



WELL-PREPARED FOOD MAKES WELL-FED MEN

**I**N KEEPING with the theory that good living contributes to top performance, the carrier provides the ultimate in habitability for ship's company and squadron personnel. Just about every comfort a sailor has ever dreamed of has been incorporated in the new giant of the seas.

Interior decorators were given a free hand in planning color schemes. The artistic results promise a comfortable tour of duty in one of the most important parts of the ship—the crew's berthing spaces. The harmonious paint job is completely in keeping with the other innovations. The carrier boasts bunk arrangements with foam rubber mattresses, individual fluorescent lamps and air conditioning outlets that can be adjusted to suit each man's needs. Re-designed lockers and increased laundry facilities add to the improved living, and a crew's lounge with easy chairs, writing tables and television, goes a long way toward making off-duty hours more relaxing and enjoyable.

A new type "head" designed for future use was installed for experimental purposes. First for ships of the Navy, it is equipped with hot air blowers to dry face and hands, which will save considerably on laundry. Showers cut on

and off automatically when the ship is at sea to conserve water. Corrosion-resistant steel cuts down on paint and increases cleanliness. Individual lockers provide for stowage of toilet articles.

Other facilities that give credence to the crew's claim that duty aboard *Independence* is the best in the Navy include a post office, bakery, wide-screen movie, shoe repair shop, library, barber shop, basketball and volleyball courts, sheetmetal, copper and blacksmith shops, laundry, ice cream plant and tailor shop.

It has a modern 84-bed hospital fitted out with the latest surgical and X-ray equipment. In the event the ship is subjected to an atomic blast, decontamination stations are located in easily accessible spots throughout, so that men exposed to radiation can be quickly washed down. The dental department has four up-to-date chairs, and a modern prosthetic laboratory where experienced technicians can make a set of dentures or a gold inlay.

The two crews' galleys have the latest gadgets on a gigantic scale to take care of the 10,500 meals served daily. Food-shaping machines can make 2400 hamburgers an hour



WHEN GOOD FELLOWS GET TOGETHER, THERE IS MANY A SONG



A MODERN BED THAT IS ALSO A LOCKER IS A TOUCH MEN LIKE



AS THE USS INDEPENDENCE (CVA-62) SETS SAIL WITH ITS CARRIER AIR GROUP ABOARD, IT IS A PROUD DAY FOR A NEW SHIP OF THE LINE

and grills on the serving line make it possible to have them cooked to order. Coffee urns brew 40 cups a minute; potato peelers skin 1000 spuds an hour; the disposal distintegrates 4800 pounds of garbage an hour.

*Independence* has the largest air-conditioning system in a Navy ship. Six centrifugal refrigerating machines furnish a total of 1050 tons of cool air, enough to air-condition 20 buildings the size of Radio City Music Hall, or 500 average homes.

Many of the working spaces are cooled: the pilots' ready rooms, communications office, combat information center, the engineering spaces from which the main propulsion plant is operated, and all areas in which personnel work for prolonged periods of time.

An essential fighting tool of any combatant ship is its telephone system. The new carrier has a 400-line fully automatic system which can accommodate 800 instruments on a two-party line principle, with selective rings. A special executive right-of-way feature permits high priority calls to be cut into any conversation.

Modular furniture is installed in the staterooms. Uniformly sized assorted units fit against the bulkheads, thereby providing more living space and a greater variety of arrangement. Escalators carry pilots from ready rooms to flight deck at the speed of 120 feet a minute. The power generated by each of the eight boilers is enough to light a city the size of San Francisco.

These facts and figures indicate that *Independence* is, indeed, comparable to a modern metropolis, in population, facilities and conveniences. All activity, however, is geared to air operations, for this is the reason the ship exists. Innovations have been made on the flight deck which sets the new attack carrier apart from all others.

The mirror landing system is mounted on the portside elevator permitting raising and lowering for safety and efficiency. A jet blast deflector of three extruded aluminum panels, each 14-feet wide, is installed aft of the bow catapults and the inboard waist catapult. Each outboard panel is watercooled.

During the shakedown period, which started 21 April and ended 25 June, the men of *Independence* learned to get the

most out of each piece of equipment by means of individual effort and co-ordinated teamwork. For these two months, the Fleet Training Group at Guantanamo commanded by Capt. G. R. Wilson put the ship through its paces.

Upon arrival at Cuba, CVG-7 temporarily set up shop ashore at the naval air station. The carrier, meanwhile, went through intensive instruction and evaluation on the department and division level. In increments, the air group returned on board allowing time for a build-up of experience among the aircraft handling crews. Once all the planes and personnel were embarked, the carrier trained for her assigned mission, air operations.

From this point on, every turn of the screw, every shot of the cat, every scream of a turbine mated each man to the ship. *Independence* emerged a solid fighting unit ready to assume her duties as a guardian of the Free World.



FIGHTING A4D SKYHAWK IS PROPER SYMBOL OF CARRIER'S PUNCH

# CVA 42

## FRANKLIN D. ROOSEVELT

One of the great U. S. Navy carriers, the USS Franklin D. Roosevelt plays an important role as part of the Sixth Fleet. In April, the big attack carrier participated in Operation Topflight and Operation Green Swing. As CVA-42, one of the Midway class, she was commissioned nearly 14 years ago on 27 October 1945. She still represents real power for peace in the Mediterranean.



HOOKED UP AND READY FOR LAUNCH IS AN F4D BELONGING TO VMF-114'S 'DEATH DEALERS'



ONE OF VAH-11'S A3D SKYWARRIORS TURNS UP





FOR THE BEGINNING OF ITS CATAPULT SHOT



FAST ACTION CHARACTERIZES THE PART CREWS PLAYED ON THE FLIGHT DECK OF THE FDR



## Forrestal Aids Polio Fight Italian Towns Appreciate Vaccine

Warm village receptions in Torre le Nocelle and Montemilieto (near Naples) welcomed U. S. Navy personnel who delivered the first half of 7000 polio vaccine units purchased by the USS *Forrestal* (CVA-59).

In carrying the precious medicine to their ultimate destinations the Navy passengers were accompanied by city and medical officials from Naples and nearby Avellino.

Having completed her tour with the Sixth Fleet, the *Forrestal* was unable to send a ship's representative for the occasion but Capt. Daniel J. Corcoran served as dual spokesman for the carrier and for RAdm. Frank Akers, ComFairELM/ComNavActs-Med. Capt. Corcoran, a member of Admiral Akers' staff, presented the packages to the respective mayors, along with pictures of the gift-giving ship.

Originating the idea of vaccine purchase for these villages was Cdr. J. H. Iarrobino, operations officer aboard the *Forrestal*. With the aid of the U. S. Consulate, the vaccine was purchased through a stateside concern after a voluntary ship's campaign netted more than \$2,500 in crew contributions.

## JG Given Proficiency Prize Hart Memorial Award at Oceana

At NAS OCEANA, Va., Ltjg. James H. Newton, a member of VA-85, was presented the coveted Silas C. Hart, Jr., Memorial Award. The presentation was made by Capt. B. M. Streat, Chief of Staff, ComNavAirLant.

The award, an engraved plaque and handsome wristwatch, is presented annually to the flight training graduate who demonstrates the highest degree of proficiency in instrument flying while undergoing basic and advanced flight training in the Naval Air Training Command.

Ltjg. Newton previously received the Texas DAR Award for 1958 as the most outstanding student Naval Aviator flying propeller-driven aircraft in the advanced phase of flight training.

Newton completed flight training at NAAS CORPUS CHRISTI in February 1958, reporting later to VA-85. As Assistant Operations Officer of the squadron, he flies the AD-6 *Skyraider*.



**MC DONNELL F4H-1** literally stands on its tailpipes in power take-off demonstration at the Armed Forces Day observance in Washington. Also shown publicly for the first time in the east was North American's A3J Vigilante. Nearly 500,000 people attended the two-day show featuring the Navy's famed Blue Angels.



**COMMANDER** of Carrier Division Two, RAdm. W. A. Sutherland, Jr., and the Crown Prince of Greece have their picture taken on the bridge of the USS *Franklin D. Roosevelt*. The Prince spent the day observing operations.

## Space Ship Engine Planned ONR, AF Award Republic Contract

Government contracts for advanced work on a new type engine with space propulsion potential have been awarded to Republic Aviation Corporation.

Contracts totaling \$193,000 have been received from the U. S. Navy Office of Naval Research and the U. S. Air Force Office of Scientific Research for research relating to two major areas of development of a magnetic pinch plasma engine. Republic has had a team of scientists working on this project for nearly a year.

The engine would use a heavy gas like oxygen and turn it into ions and electrons. These are in turn compressed in an invisible cylinder of magnetism and shot out the rear at tremendous velocity. In experimental models the company has proven the basic theory behind the engine. The new research contracts will enable the company to delve into the problem of cycling these pinches for continuous operation, much like the cylinders of an automobile engine are cycled.

Research will begin at once under the contracts and continue into 1960.

## Ground Recovery is Made Controllers Land Regulus Missile

Guided Missile Group One has made the first recovery of a *Regulus I* missile using a newly developed Optical Ground Landing Control (OGLC) system developed by Chance Vought Aircraft.

A major improvement over the previous method of controlling a missile from aircraft flying "wing" positions, OGLC permits a greater degree of precision in landing the *Regulus I*.

The former method of airborne control required extensive pilot training and precise coordination between the control pilots, as well as requiring supplemental corrections of the missile flight path during the low altitude landing approach.

OGLC requires two controllers on the ground. One is located next to the landing area for control of missile pitch attitude and the other is positioned at the end of the runway to control missile azimuth displacement.

Corrections necessary for safe recovery can be given earlier and in smaller increments to help compensate for wind drift and permit adjustment of glide-path during the landing.



# IN FOREIGN SKIES



RADM. CLARK, AIR COMMODORE CLEMENTS

## USN Admiral Visits RCAF

RAdm. T. B. Clark, USN, Commander Fleet Air Wings Atlantic, and Air Commodore W. T. Clements, RCAF, Air Officer Commanding the Canadian Maritime Air Command, had an opportunity to discuss their joint area of ASW operations in the western Atlantic when Adm. Clark and members of his staff were guests of the Royal Canadian Air Force in May.

Since the two commands have much in common, this visit gave FAirWings-Lant personnel the opportunity to familiarize themselves with the RCAF organization as well as some of their operating and training techniques.

Visits to the operating squadrons also permitted an exchange of information. Stops were made at Halifax, Nova Scotia, headquarters of the Maritime Air Command; at Greenwood, Nova Scotia, base of 404 and 405 Maritime Patrol Squadrons; and at Summerside, Prince Edward Island, where the Maritime Operational Training unit is based.

## French Complete Marlin Training

Twenty-eight officers and men from the aviation branch of the French Navy completed their indoctrination course in the operation and maintenance of the Martin *Marlin* P5M early in May. VP-44 was in charge of the instruction.

The French Navy is purchasing a number of these aircraft from the Martin Company, and since delivery was made in Norfolk, the Frenchmen conducted familiarization flights in their own aircraft at that air station.

Upon completion of their training, each officer and man received a certificate personally signed by RAdm. T. B. Clark, Commander Fleet Air Wings Atlantic, and then was presented the plaque and "keys to the aircraft." In the picture the commanding officer of VP-44 is making the presentation to LCdr. Labit of the French Navy.

Four of the French *Marlins* left in early May for the flight back to their home base in Dakar, West Africa, via stops in the Caribbean and Brazil.



VP-44 AND FRENCH IN FAREWELL CEREMONY

## Tape Recorder for Aircraft

A new device to give on magnified tape a continuous and permanent record of everything that happens to an aircraft in flight has been developed by a British firm of instrument makers. It has a basic price of \$7000. Analysis equipment to support the recorders runs to about \$196,000 installed.

The instrument, which measures only 19½"x7½"x10" and weighs roughly 40 pounds, records all the information given on the dials in a pilot's cockpit, as well as pressures and fatigue on all parts of the airframe. The tape is removed for analysis.

This would be particularly valuable in showing clearly any mechanical failure resulting in a crash.

With this possibility in mind, the designer has housed the instrument in a sturdy casing capable of withstand-

ing any probable impact. An automatic ejection device is included to throw the recorder clear and—to guard against loss in the eventuality of the aircraft coming down at sea—a float to keep it surfaced and a dye to mark its whereabouts are built-in features.

## New RAF Trainer Flies

A new version of the English Electric *Lightning* supersonic fighter made its first flight in May two weeks ahead of schedule. The company's chief test pilot was at the controls. The two-seater trainer has been ordered in quantity for the Royal Air Force.

The *Lightning* is powered by two Rolls-Royce *Avon* turbojets with afterburner. The first flight lasted a half hour, and the aircraft flew at supersonic speeds 15 minutes after takeoff.

The trainer has side-by-side seating for instructor and pupil.

## Trackers Built for Holland

Grumman S2F-1 *Tracker* antisubmarine airplanes, in production for the Netherlands government under a \$3,000,000 contract administered by the U.S. Navy under the Mutual Defense Assistance Program, will be used on the Dutch aircraft carrier, *Karel Doorman*.

Although designed for aircraft carrier operation, the planes were originally bound for duty with the Dutch as land-based craft, since Dutch naval leaders had not considered the *Karel Doorman* capable of handling flight operations of aircraft as large as the



TRACKERS LINE DECK OF 'KAREL DOORMAN'

twin-engined Grumman S2F *Tracker*.

However, after a three-day program during which the Navy's Norfolk-based VS-30 successfully demonstrated the *Tracker's* complete operational compatibility with the *Karel Doorman*, the Dutch decided that the *Trackers* would be used on that aircraft carrier.

# WAVE GOES TO NATO AIR AGENCY

THE END of August will find Commander Frances E. Biadasz headed for Paris and her assignment to NATO's air agency which is headed by the renowned aerodynamicist, Dr. Theodore von Karman. The Advisory Group on Aeronautical Research and Development (AGARD) composed of NATO nations has its headquarters in the French capital, but its work goes on in laboratories and research centers all over the Free World. Cdr. Biadasz' title will be Special Assistant for International and Public Relations to the Chairman of AGARD.

Dr. von Karman, whose achievements through more than 50 years of aeronautical research as scientist, professor and government consultant have made him an acknowledged genius of aeronautics, was largely responsible for the establishment of AGARD. His wide acquaintance with aeronautical scientists all over the world, many of whom had been his students at the California Institute of Technology, has made his chairmanship of AGARD invaluable to the Free World. His gift for translating theory into action and producing an atmosphere of cooperation in groups that might otherwise find themselves at odds is crowning his brilliant career with new accomplishments.

At the time the North Atlantic Treaty Organization was established in 1949, cooperation in scientific fields was envisioned. There was actually no definite plan of action. Dr. von Karman initiated action in 1950 by addressing a memorandum to the Deputy Secretary of Defense urging that an organization be undertaken within the NATO framework for developing research in the whole field of sciences applicable to defense. It was later determined to limit the field to aeronautics.

Following a recommendation of Dr. von Karman, the Standing Group to the Military Committee of NATO called a conference of the aeronautical research directors of the member nations to discuss matters of common interest in the field of aeronautical research and development. The conference convened in February 1951.

The initial session of AGARD was held in May 1952 in Paris. Through that year and the next, the scientists



DR. VON KARMAN AND CDR. BIADASZ LOOK OVER NANEWS AT A PENTAGON CONFERENCE

developed AGARD into a working organization with representatives from member NATO nations. There are today six panels responsible for research areas: aeromedical, combustion propulsion, flight test, structures and materials, wind tunnel and avionics.

The main work of AGARD is done in panel meetings where scientific information is exchanged and cooperative international research programs are generated. In addition to the semi-annual panel meetings, an annual general assembly is held at leading cities of member nations in rotation. The one scheduled to open September 21 this year will meet in Aachen, Germany, where Dr. von Karman was once both a university student and professor.

AGARD also sponsors a program to assist the member countries to increase the research potential by an exchange of students for high-level graduate science courses. There is also a consultants' program through which specialists from various nations give lectures at universities and special symposiums and confer with countries on specific aeronautical research problems.

Cdr. Biadasz' own background equips her for appointment to this active international research organization. She is the only Wave in the regular Navy entitled to wear air navigation wings. During World War II, she was on the staff of the Air Navigation School, and

because of her ability in French was responsible for the instruction of the French Navy's students in this country.

Associated with the Navy Public Relations Department after the war, she concurrently attended Georgetown University in the evenings to earn her Master's degree in International Relations. Continuing her evening studies for four more years while working full time in the Office of the Chief of Naval Operations, she has almost completed her doctorate. The fifth and final year she is doing under Navy contract and expects to receive her degree in June of 1960. In recognition of high scholarly achievement, she was recently inducted into Gold Key, Georgetown's honorary society.

In the spring of 1957 in a course entitled "American Foreign Policy and Defense," Cdr. Biadasz wrote a term paper analyzing proposals for Department of Defense reorganization. The paper proved to be so valuable a study that the Naval War College published it for reference material.

Assigned to AGARD, she will be linked with international scientific research in aviation. Her scholarly background, her past experience in aviation, her ability in public relations make such an assignment appropriate. As special assistant to Dr. von Karman, she will have one of the most exciting and demanding jobs in any NATO activity.



**AT NAS PENSACOLA**, Anna L. Baker, DT3, assists dental officer during a tooth extraction.



**THRILL** of a lifetime comes as Evelyn Smith gets ready for a flight with the Blue Angels.



**AT THE NORFOLK Naval Air Station**, Aerographer's Mate Alice Hall checks a rain gauge.

A  
 J  
 B  
 W  
 A  
 V  
 E  
 S



**IN THE 17 YEARS** Waves have served the Navy, they have continued to learn as they serve. A Wave officer tours a Navy ship at anchor at the Naval Weapons Factory in Washington, D. C.

J  
 9  
 5  
 9  
 4  
 2



**JANIS SUE MARR**, TD3, is at her station on a jet link during a pilot's "training hop."



**AT NAS MEMPHIS**, Capt. Winifred Quick, Wave Director, tours Operations Department.



**OVER THE TRANSMITTER** used for search and rescue, this Wave could give an SAR alert.



TRACKERS FROM NARTU ANACOSTIA AND NAS GLENVIEW, WITH MAD GEAR STINGER EXTENDED, ARE OFF ON A SUB-SEEKING PATROL

## GRAND SLAM-EX FOR RESERVES

LCdr. Paul Jayson, USNR

AMERICA'S NAVAL Air Reservists successfully passed their first tests as part of the Anti-Submarine teams of the Atlantic and Pacific Fleets.

Weekend Warriors from half a dozen stations of the Naval Air Reserve Training Command participated in a three-day sub exercise in February with the Pacific Fleet forces (NANews, May 1959). A dozen stations sent men and aircraft to East Coast cities to take part in a similar exercise during the week of April 15, 1959.

Results of these exercises left the fleet representatives convinced, beyond doubt, that the Naval Air Reserve will shoulder a responsible portion of the Anti-Submarine Defense job in the event of a national emergency.

The two exercises are regarded as forerunners of an era of on-the-job training for the new Selected Reserve forces. They were integrated into the maneuvers with fleet counterparts. What better way to train air crews and support teams than to pit them against Regular sub teams?

In planning phases of both exercises, the Naval Air Reserve Training Command was treated by the fleet commands as "another type command on temporary assignment with the fleet." As such, RAdm. Allen Smith, Jr., CNAResTra, made his own arrangements for the support of aircraft and crews.

Atlantic Fleet Slamex operations were conducted by VAdm. William G. Cooper, Commander, Anti-Submarine Defense Force, Atlantic Fleet. RAdm. Lester K. Rice, Commander Fleet Air Quonset, was exercise commander.

For seven days and nights, around the clock, the Naval

Air Reserve's crews and aircraft flew to minimize the threat of a simulated submarine attack against the Atlantic Coast, which would be real enough in wartime.

And at the end of the maneuvers the Reserves were happy to hear some wag say, "You couldn't tell the Regulars without a scorecard." This marked a new era of recognition that the Air Reserves are part of the "First Team of ASW." After all, the civilian crews have only one weekend a month and two active duty weeks each year to obtain the required sharp-edged training.

The Reserve components put on a great show of readi-



RESERVE PILOTS GIVE SERIOUS ATTENTION DURING A BRIEFING



CREW MEMBERS RETURN FROM ASW MISSION AT NARTU LAKEHURST



THIRTEEN NEW YORK 52F'S, TWO P2V'S ARE SET FOR SLAMEX

ness using a mixture of two-week training duty Reserve officers and men, enlisted storekeepers, and TAR officers. Three units participated as full members of the defensive team. One unit of 12 P2V *Neptunes* was based at NAS BRUNSWICK, Maine. Detachments of 20 52F *Trackers* were based at NAS QUONSET POINT and NAS LAKEHURST.

All three outfits were assigned to assist the northern coastal defense team. Air units worked through Commander, Fleet Air Wing Three, based at Brunswick, under the operational control of ComFair Quonset, who also had surface and other defending forces.

The close-in protection fell to the 52F crews at Lakehurst and Quonset. P2V aircraft from Brunswick ranged further out in search of sub tracks.

Maintaining a steady flow of aircraft and crews for a 24-hour vigil, in all types of weather, was no simple chore. Maintenance crews fought electronic bugaboos, supply problems and parts shortages along with the fleet.

*Tracker* crews sometimes flew with only eight hours rest. Normal turn-around time for them was 12 hours, with two 4½-5 hour flights scheduled each day of a seven-day week.

Capt. George Koch, ComFairWing 3, said of the Reserves, "Their extremely high spirits set the pattern for the

exercise and inspired a high degree of mutual confidence."

Statistics back up the contention that the Reserves can sustain an effective ASW pattern over an extended period. For the week, their aircraft piled up more than 2800 hours, including over 1000 hours each for the 52F detachments. Utilization figures showed a 7.8-hour daily use for each plane, a high number in any league.

Capt. T. S. White, senior CNAResTra representative and also a member of RAdm. Smith's staff in Glenview, was amazed at the smooth movement of logistics. "We had no major problems and few minor ones in the maintenance and supply phases," he reported. Electronics maintenance became routine after about two days orientation.

Brunswick operations were supported for the Reserves out of NAS SOUTH WEYMOUTH; support for the other units was provided by NAS NEW YORK and NARTU LAKEHURST.

South Weymouth came up with a mobile support idea. Two 28-foot trailers, jammed with parts and supplies, were driven to Brunswick as a central source for P2V parts.

Maintenance crews, many working on 12-hour port and starboard watch sections, kept availability high. One plane commander said he was getting "too much quick service."



JAX FLIGHT CREW REPLACES 52F SOLENOID



TRACKER GETS FULL STORE OF SONOBUOYS



WILLOW GROVE, LAKEHURST ORDNANCEMEN



CDR. FREDERICK ROYCE, EXEC OF VS-753



PETRILLA, AT3, OF NAS NEW YORK AT WORK



CHIEF S. L. BIDSIADECKI, ACE CALCULATOR

"We stopped at the line after a flight and were met by 20 men, ready to pounce on every discrepancy," he said. "We were still in the airplane writing up the discrepancies when the repair crews swarmed over us—some minor troubles were fixed before they could be written up."

Briefings of Reserve crews were conducted chiefly by Reserve Air Intelligence Officers, who were in close liaison with the fleet command headquarters at each base.

Principal problem was communications. S2F units used a number of devices for extending the range of their voice circuits. P2V crews, of course, managed better because of the radioman assigned to each plane and the manual CW key system inherent to the aircraft.

S2F crews operated continuously in their "poopy suits," heightening the discomfort caused by unseasonal 75-degree temperatures. The anti-exposure suits were mandatory equipment owing to the low temperatures in exercise waters.

Weather for the search was excellent, with the exception of one day of a frontal passage. A few flights had to be

aborted because of weather but most were conducted under Instrument Flight Rules under Navy control.

Atlantic Fleet is keeping the operational features of the sub chase a matter of classified information. But the Reserves learned anew to respect their submariner friends.

VAdm. Cooper called LantSlamex "outstanding in the fusion of assigned ASW forces as a team. Participation of the Reserve Forces was commendable and I anticipate future combined exercises may show even more progress," he said.

RAdm. Smith, who made a personal tour of the three Reserve areas, was impressed by the eagerness of his men. "I am highly pleased with all aspects of the support given by all hands. The bearing of all personnel, their enthusiasm in attacking problems of supply and maintenance, the professional pride and confidence evident in both ground and flying personnel, and the fine spirit of cooperation among personnel and units, all gave proof of outstanding attitude," he said in his post-exercise message.

The Reserves are looking forward to more ASW problems.



MECHS CHECK EACH TRACKER COMPONENT TO INSURE SAFETY AND HIGH AVAILABILITY



NARTU NORFOLK CREWMEN HEAD FOR SLEEP



JET SOLO FLIERS AND THEIR INSTRUCTORS

## Another Mark in History Students Solo T2V-1 Jet at Night

One night in May, three students of BTG-9, Ens. Jack Bishop, NavCad Loren Luna and NavCad Robert Babis, were launched from Sherman Field, NAS PENSACOLA, Florida, in the Lockheed T2V-1 jet aircraft.

It marked the first time in history of Naval Air Training that any student in basic flight training has flown a jet solo after dark. On hand to congratulate them immediately after landing was Cdr. H. V. Weldon, Group Commander of BTG-9.

One of the three summed up his reaction to the flight by saying, "It was the greatest thrill I've had in flying so far." The flight consisted of an hour and 15 minutes within a radius of 100 miles and was completed after a series of touch-and-go landings.

In the picture are shown: Cdr. Weldon, Luna, Babis, Bishop, Cdr. Trudeau.

## Navy's New Fleet Shoe Accepted after Extensive Tests

A new water, oil and super-wear resistant Fleet Shoe, combining some of the most radical advances in recent years in footwear material and construction, has been adopted for Navy-wide issue.

The new utility shoe was developed by the Clothing and Textile Division of the U. S. Naval Supply Research and Development Facility at Brooklyn, N. Y., a Bureau of Supplies and Accounts activity, with the cooperation of the National Bureau of Standards and the leather, shoe, and allied chemical industries.

Expected to replace three different types of shoes now in Navy use, the Fleet Shoe was under development and evaluation for more than two years. Laboratory research and manufacturing trials were followed by extensive tests.

While primarily designed as a work rather than a dress shoe, the ankle-high "chuka" style footwear has silicone-treated upper leather that takes a brilliant shine. The non-marking heels and soles are of specially compounded synthetic rubber and are highly abrasive-resistant even on the sanded flight decks of the Fleet's newest carriers. The permanently shaped shoe counters interlining the heel areas are of molded polyethylene to withstand repeated wetting and drying. Vinyl welting and plastic sealant are used to make a watertight joining of the soles to the uppers at the inseam stitching.

Exhaustive tests ashore of the new Fleet Shoe were made by Navy recruits at Bainbridge, Maryland, and at the Great Lakes Naval Training Center, Ill., as well as by the Seabees at Davisville, Rhode Island. To determine acceptability by forces afloat, the shoe was successfully tested by personnel on a variety of Navy craft, including the USS *Forrestal* (CVA-59) and the nuclear submarine, USS *Seawolf*.

The Fleet Shoe will be available in some sizes within a year as stocks of the old types run out. Although its cost is anticipated to be about \$1 more per pair, the government is expected to save over \$200,000 annually in a consolidation of Navy footwear inventories that will reduce related administrative costs and effect sizable retrenchments in shoe purchases. At the same time the shoe will add to the comfort and safety of Naval personnel.



FIRST NAVY PILOT to check out in Strategic Air Command's B-52 bomber, Cdr. Charles H. Carr (right) has a post-flight cup of coffee with his instructor pilot, Maj. D. L. Taylor of 93d Bomb Wing at Castle AF Base, Calif.



NAVY T2J jet trainer, built by North American, lands aboard the USS *Antietam* during carrier suitability trials. The tests, flown by NATC pilots Lt. J. R. C. Mitchell and LCDr. P. E. Spencer, included catapult launches.

## USS Leyte Ends Career Steamed Some Half Million Miles

Named for the Battle of Leyte Gulf, the USS *Leyte* (CVS-32), which entered active service on 11 April 1946, was retired 15 May and sent to the Brooklyn Naval Shipyard for decommissioning.

During her 13 years of active service, the *Leyte* steamed more than half a million miles. As the Korean hostilities opened, the big attack carrier was in Beirut, Lebanon. Ordered to the Seventh Fleet, she covered 18,500 miles at a record average speed of 23 knots. For 108 days, she operated in the Korean area. Of these, 92 were spent at sea—52 of them consecutively. Pilots flew 3933 sorties, totalling over 11,000 hours in the air, and inflicted massive damage upon the enemy. For her Korean efforts, the *Leyte* won the Navy Unit Citation and the Korean Presidential Citation.

In 1953, the *Leyte* was designated a CVS and equipped with the *S2F* type aircraft. In 1955, *Leyte* made her sixth voyage to the Mediterranean and was chosen to be the flagship of Commander Carrier Division 18, an honor she retained until her retirement.

In her role as the nucleus of a hunter-killer force which included a squadron of destroyers, the *Leyte* and her embarked air group had the combined mission of detecting, hunting and killing 'enemy' submarines in training problems.

The first carrier to engage in operations against a nuclear submarine, the *Leyte* was awarded the Navy's prized Battle Efficiency Pennant as the outstanding ship of her class. This was proper recognition of a great fighter.



AERIAL TARGET POWERPLANT IS REPAIRED



KD2R-5 TARGET IS READIED FOR LAUNCH



ELECTRONIC EQUIPMENT GETS BENCH CHECK

## VU-6 SERVES FLEET GUNNERS

**S**KEET FOR THE FLEET, motto of Utility Squadron Six, exemplifies the squadron's primary mission of supplying, operating and maintaining small target pilotless aircraft.

Ships of the entire Atlantic Fleet rely on this unique squadron to sharpen the sights of gunners and missilemen of our modern Navy.

Utility Squadron Six was commissioned March 1, 1952, at NAS NORFOLK. Until March 1957, the squadron used two F7F-2D control aircraft assigned for aircraft and CIC tracking. Now commanded by Cdr. J. M. Reigher, the squadron is composed of deployable units and shore-based detachments.

Units can be embarked on any ship possessing adequate deck space to permit the installation of a catapult or a zero-length launcher.

Detachment One at Guantanamo



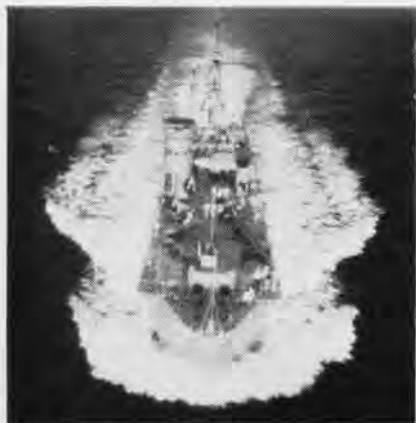
Bay services all ships training in that area. Detachment Two is located at Fleet Air Defense Training Center (FADTC), Dam Neck. It fulfills its obligation with aerial targets for FADTC's gunnery school and thus logs almost 40 percent of the squadron's

total flight time logged in a month.

Eight units are available for assignments to various combatant and amphibious ships on request. Units carry several aerial targets and pertinent gear, forming a compact, self-sustaining unit capable of being deployed aboard ship for many months.

VU-6 currently uses the KD2R-5 target in all its operations. This aerial target has a wing span of 13 feet and a fuselage length of 12 feet. It is powered by a McCulloch 0-100, 4-cylinder, 2-cycle, 72 hp engine.

The main advantage offered by this target is that when it is used in conjunction with fire control radar, it can be flown out of sight to ranges of 30,000 yards by mounting a sensitive gyro in the aircraft for lateral and longitudinal stability. The squadron expects to receive newer Beech KDB-1 targets in the near future.



VU-6 USES LSM TO SERVE NORFOLK SHIPS



ZL-1 LAUNCHER IS DISPLAYED FOR CO, XO



HELO RECOVERS TARGET FROM THE WATER





POISED ON BEECH-DESIGNED ZERO-LENGTH LAUNCHER, KDB-1 IS SET FOR NEXT FLIGHT

**D**ELIVERY has started on the latest in the Navy family of radio-controlled recoverable target aircraft, the KDB-1. Designed and built by Beech Aircraft, about 600 will be turned over to the Navy within the next 12 months. They will be operational in the Fleet by late 1959 and will gradually replace the KD2K series.

Developed under a Bureau of Aeronautics contract, the KDB-1 will be used for surface-to-air and air-to-air weapon systems evaluation and training. Extensive testing at the Naval Air Missile Test Center, Point Mugu, showed that the corner reflector pods on the wing tips give an additional guided missile capability. Aircraft armament and fleet guns will be pitted against the realistic mark in order to keep the Navy's aim true.

The small pilotless aircraft is a high-wing monoplane with a V-tail. Its fuselage measures a foot and a half in



REMOTE CONTROL, TRACKING OPERATIONS

diameter. It is 13½ feet long with a 12-foot wing span and a gross weight of about 600 pounds. Propeller-driven,

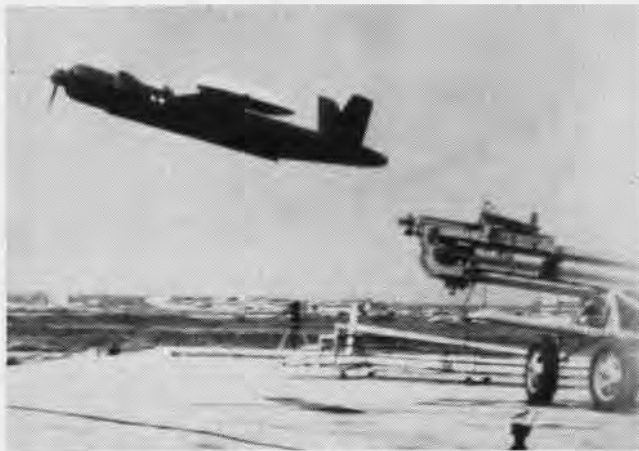
it is powered by a McCulloch six-cylinder, horizontally-opposed, two-cycle turbo-supercharged engine. Rated performance is 275 knots at 25,000 feet with enough fuel for one hour. Control may be exercised to a range of more than 50,000 yards and guaranteed operational altitude is 30,000 feet. However, it has been flown as high as 43,500 feet, and operated successfully at ranges of over 100,000 yards.

Recovery is accomplished through a reefed parachute system which is stowed in the tail section. When splashed at sea, the target assumes a tail-high attitude and is provided with a large retrieving eye. It is required to stay afloat at least 60 minutes, but has a much greater endurance.

The KDB can be air-launched, but will usually be catapulted from the standard AT-3 pneumatic catapult or from the very simple Beech zero-length launcher with JATO assist.



RECOVERY SYSTEM INSTALLATION BEFORE LAUNCH FROM AT-3 CAT



IT'S OFF! THE TIME-TO-CLIMB TO 25,000 FEET IS 7.9 MINUTES

# FAA SUMMER FLIGHT SURVEY

**S**HARPEN your pencils, lads, smile, and as of 9 July be prepared to spend an additional five or 10 minutes in operations after your flight. For on that date and repeating on successive Thursdays for four-day periods, almost all Naval Aviators are likely to be asked to complete detailed questionnaires concerning their local or extended flight activity anywhere in the United States.

The questionnaire information is vital to a gigantic survey initiated last January by the Federal Aviation Agency (FAA) in which more than 100,000 pilots are expected to be interviewed. The survey is being conducted for FAA by a private management consultants firm, Booz, Allen & Hamilton.

Purpose of the FAA project is to develop consistent and best estimates of the overall and detailed dimensions of flight activity today and into the future as far as 1980.

The data gathering effort will cover 825 of the nation's civil airfields, 52% of its general aviation aircraft and 100% of military air bases and commercial airlines. Some of the factors included in the samplings are variations due to aircraft and pilot characteristics, weather conditions, time of day and week and season, terrain effects and effect of economic conditions in various parts of the U. S.

The questionnaire which will be used by the Navy has two parts—local and point to point or round robin. Containing approximately 30 questions, both are designed to determine such factors as purpose and nature of the flight, point of origin, destination, altitude, type of aircraft, bases used, speeds, flight time, etc.

Concurrent with the field survey of pilots, detailed weather data will be collected from hundreds of weather bureau stations. In addition, information and forecasts concerning the nation's economic and aeronautical environment as it is and will probably be in the next 20 years will be obtained from such sources as the Bureau of Census, Market Statistics, Inc., etc.

Once the survey is completed all data on current flight activity will be merged with the weather and economic information in one of the largest high

speed electronic computers available, the IBM 709. The end result of this operation will be approximately 150 equations. Each is capable of forecasting some specific phase of aviation activity for the present and the next 20 years. Some typical equations will permit the development of accurate estimates of the following:

- The peak number of landings and takeoffs by general aviation light twin aircraft that will probably occur at airport X during an activity period.
- The peak number of single engine Navy jets that might be expected in the airspace over any one or all of 920 one degree cells in the country during a specified period.
- In addition the peak number of large multi-engine airline aircraft flowing between Washington and New York can be estimated in pertinent detail—now and for the 20 year future.

With such information available, FAA expects to be able to prepare improved traffic plans for assigned air lanes for military and civilian users. It will also enable installation of electronic equipment where it will be most

effective and the construction of facilities where needed for traffic increases.

According to FAA, the full potential of the method developed during this task offers an almost unlimited number of answers to specific questions that might be posed. Such questions as: "What would be the expected activity at Idlewild Airport between 4:00 p.m. and 5:00 p.m. on a Sunday in July of 1964 if the weather was perfect? If the ceiling was 800 feet and the visibility 2 miles?" The number of possible answers available can be numbered in the 10's of billions. This study will provide a new tool with a tremendous potential. In the opinion of one official, it will help FAA plan for tomorrow rather than being surprised by it.

## New Name for a New Job Naval Weapons Plant as of July 1

The U. S. Naval Gun Factory is to be known as the U. S. Naval Weapons Plant as of July 1, 1959. Its new name is in line with its new mission and reflects technological advances.

The Gun Factory, which was established in 1799 as a Navy Yard, no longer manufactures guns. Its workload is primarily in the field of guided missiles and other modern weapons.



**WEARING GENUINE** French berets to denote their call sign "Artist" are nine pilots of VFAW-3. Kneeling (l-r): Ltjg's Delmas L. Northcutt, Teddy B. Etheredge, Jaime P. Alexander and Robert L. Gilbert. Standing (l-r): Cdr. Eugene A. Valencia, Ltjg. Michael R. Urgitus, LCdr. Harry W. Junilla, Ltjg. Arland A. Nankivil and LCdr. Francis E. Mooney. All nine are alert pilots for VFAW-3, the only Navy squadron assigned to the North American Air Defense Command.

# THEY'RE ACES ON AVAILABILITY



**HIGHLY TRAINED** personnel in four major jet engine types insure accurate service. Here finishing touches are put on a J65 engine.



**THE FINISHED PRODUCT** of the jet shop is a newly renovated engine which is carefully rolled into the waiting Douglas A4D Skyhawk.

**H**HEADQUARTERS and Maintenance Squadron Twelve at Iwakuni, Japan, claims a sure formula for its Jet Engine Shop: "An engine a day keeps planes flying away." Since 1 December 1958, the shop with a 24-man crew has processed one jet engine per day on an average for VMA-211 and VMC-3.

Only production line precision and teamwork in the jet shop make this average possible. Planned Progressive Maintenance (PPM) is a schedule which permits efficient use of men, skill and equipment. Gone are the days of the "one man know it all" system whereby the plane crew did all but the very heaviest of the maintenance.

Prior to the adoption of the PPM

schedule, each squadron was required to make its own jet engine checks. This meant that the aircraft remained idle until the check or necessary jet engine repairs were completed. The plane's inactivity could be a matter of days and even weeks.

Now, a plan has been worked out whereby a complete spare engine is ready to go at all times and an aircraft is no longer grounded for need of a ready service engine.

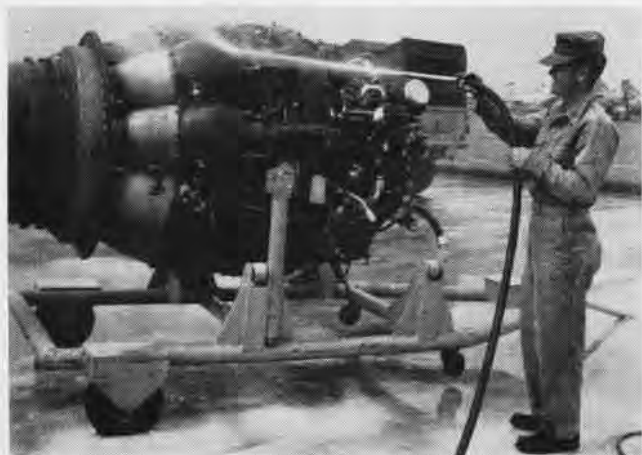
To carry out this plan, Maj. H. P. Mosca, Group Maintenance Officer and Commanding Officer of H&MS-12, arranged for a large quonset warehouse to be cleared out and for men and equipment to be assigned to the new jet shop. MSgt. Stanley J. Kowalski

is the non-commissioned O-in-C.

Four types of engines—the J33, J34, J48, and J65—are maintained in the jet shop daily. The maintenance is done by the 24-man team.

The unit is divided into five working crews, each consisting of an NCO in charge and four other mechanics. The jet shop maintains a schedule of 18 hours a day with one crew working at night.

Because each crew is fully checked out on all four engines, it is possible to maintain the average of one engine a day. In one month, the percentage of hours spent on the four engines was divided as follows: 11% on the J33; 25% on the J34; 27% on the J48; and 37% on the J65's of Marine aircraft.



**ONE STEP** in preparing an engine for repair is a thorough washing. Previously grease has been removed by a special cleaning solvent.



**LIFELINE** of maintenance is supply. High usage items are a must, and SSgt. R. L. Abeam is one of the men to keep the supplies available.

## Survival Manual Re-issued Includes Most Recent Advances

A popular Navy manual, *Safety and Survival Equipment*, NAVAER 00-80T-52, has been re-issued. It supersedes the 1954 revision. Well illustrated with pictures of the very latest safety gear, it offers coverage of a wide field.

It brings the reader up-to-date on oxygen equipment, parachutes, safety belts and harness, ejection seats, flight clothing, emergency protective clothing, life rafts, emergency kits, and droppable rescue equipment.

The manual has been provided to assist the Survival Officer and Flight Surgeon in their important task of obtaining, handling and maintaining a wide variety of safety and survival equipment. As the forward points out: "It is not intended as a means of providing complete instruction in the use of safety and survival equipment. It is rather a training guide, with general but comprehensive coverage of the various items of survival equipment."

## Emergency Part Delivered Airdropped to Picket Ship by WV

A new air drop procedure for delivery of emergency supplies to surface units has been put into practice by the Pacific Barrier command. It involves packaging the material in a watertight metal container and dropping it to the ship by parachute.

The first such drop, a 40-pound ship's generator part, was dropped from an Airborne Early Warning *Super Constellation* to the radar picket ship *USS Haverfield* in April. The container was recovered from the rough sea six minutes later, its contents unharmed.

"The very nature of ships deployed along the 1500-mile barrier requires that we find a fast and effective way of getting emergency supplies to them," said Cdr. R. H. Robinson, staff training officer of the AEW wing.

"Our radar pickets are on the 'line' 20 to 30 days at a time and anything from emergency medical supplies for the ships' crews to replacement parts for the ships' complicated electronic system could be needed at any time. Now, instead of the ship having to leave its station, we can supply them on station in a hurry."

Containers for the airdrop project were designed by LCdr. J. T. Freeman.



CDR. H. V. WELDON (left), Basic Training Group Nine, NAS Forrest Sherman Field, Pensacola, welcomes the first USAF exchange officer assigned to instruct in the Navy's basic jet training group, Lieutenant Robert Hogan.

## NOTS Has Low AOCF Rate 100% Availability for Six Weeks

The Naval Ordnance Test Station, China Lake, which employs 76 aircraft of 26 types, has attained a mark of six weeks operations without an AOCF (aircraft out of commission for lack of spare parts).

Aircraft operated by the test station range from the oldest to the newest on the Navy inventory and even include an Air Force F-104. Frequently there is only one plane of a type and if it is not "up," the operation that was scheduled cannot be accomplished.

## BTG-9 Gets Safety Award Earns Citation in its First Year

In its first year of existence, Basic Training Group Nine, NAS PENSACOLA, has earned the Basic Training Command's coveted Safety Award.

BTG-9 was activated July 1, 1958 as an evaluation group to determine the feasibility of training student Naval Aviators in carrier jet aircraft during basic training.

Students were provided 120 hours of flight in the Lockheed T2V-1 tandem trainer. The course included transition, precision, acrobatics, day and night navigation, basic and radio instruments, formation flying, and carrier qualifications.

Additionally, more than 200 hours of classroom instruction and 50 hours of flight support lectures were given.

The program proved a success in less than four months. The group was expanded, more aircraft were assigned,

more instructors and students were received, and the daily roar of jets soon became as familiar as the sound of the old SNJ trainer.

Cdr. H. V. Weldon, Group Commander, said: "We all feel very proud about receiving this award. The combined efforts of all the officers and men made this possible and I believe that continued hard work and drive will bring more of these awards our way."

## Carrier Band is Popular Plays Full Schedule in Far East

The ComCarDiv Five band, aboard attack carrier *USS Midway*, has given the people of the Far East an idea of the different types of American music, from concert to Dixie Land.

Directed by Chief Musician Paul Coughlin, the band has played at the opening of the Tokyo Television Tower, the Yokosuka Children's Park, Tokyo's Jochi Dai Gaku University, the Queen Elizabeth Youth Center in Kowloon, and at the Japanese National Defense Academy.

## Finck Hangs Up Hard Hat He was Aircrewman 19 of 20 years

Chief Aviation Electrician's Mate Russell V. Finck, who spent 19 of his 20 years as a combat aircrewman, has transferred to the Fleet Reserve. He was last assigned to VAW-12.

Breaking in as a radioman on cruiser aircraft in 1939, Finck logged 7500 flight hours in aircraft ranging from bi-wing soc3's to the AD-5W. He was an airborne gunnery spotter from the *Tuscaloosa*, CA-37, in the attack on the French battleship *Jean Bart* during the African invasion.

Next he flew in OS2U's from the *Boston*, CA-69, in the Pacific, earning two air medals for his efforts in rescuing downed SB2C crews off Truk.

After duty with VPP-2 in the Canal Zone and Bogota, Colombia, he transferred to VR-3 to take part in the Berlin Airlift. He spent five years with a P2V squadron based at Quonset and made several deployments to Newfoundland, Iceland, Scotland and Greenland.

He began his final tour, with VAW-12, in 1954, and here he first became acquainted with the tail-hook Navy. Since then he has made two extended cruises to the Mediterranean aboard the *Coral Sea*, riding AD-4W's and AD-5W's down for 125 carrier landings.



**USS ORISKANY**, veteran of Korea and heroine of movies, is in commission after complete modernization which includes an angled flight deck, hurricane bow and steam catapults. Her skipper is Capt. I. M. Wright.

### Five Crusaders for NASA Ordered for High Altitude Work

The National Aeronautics and Space Administration is going to use Chance Vought's *Crusader III*, Navy Mach 2 plus fighter, for research related to passenger-carrying aircraft of tomorrow. The fighter will be used in a program aimed at obtaining data on the supersonic high altitude jet transport of the future.

NASA states that the program will embrace studies on noise problems in supersonic aircraft, automatic pilot projects and high speed radar tracking.

The *Crusader III* is well suited to its task. Equipped with the newest, most versatile electronic equipment ever built into a Navy fighter, it is designed to relieve the pilot of many of his routine flying tasks and enable him to concentrate on his mission.

Push button features anticipate the day when automatic systems will control commercial airlines, prevent collisions and perform most flight functions.

The aircraft is capable of operating at space-edge altitudes above 95 percent of the earth's atmosphere and of reaching speeds well above twice that of sound. Its range is greater than that of any fighter capable of such high performance.

NASA will get five of the *Crusader III* aircraft. Two will be assigned to the Langley Research Center in Virginia and another to Ames Research Center at Moffett Field, California. Two additional aircraft—not flyable—will be used as spares.

Also included in the NASA program for the highly advanced fighter will be some research work for Navy and the Air Force, NASA officials say.

### Ordnance Crews Warned Weapons Meet Prompts BuOrd Alert

Since OPNAV Notice 3590 has scheduled the 1959 Naval Air Weapons Meet at MCAS YUMA, Arizona, from November 30 through December 4, squadrons on the West and East Coasts are now making preparations to compete for the honor of representing their coast in the various classes of competition. This has prompted the Bureau of Ordnance to call attention to the necessity of vigilance on the part of each crewman. There is to be no let-up in the constant drive for safety.

"During this competition as well as at all other times, sound safety practices are essential. Boresighting, checking electrical firing circuits and arming of aircraft can be dangerous."

BUORD goes on to say: "You can only do these things to one gun at a time. There are three other guns in most installations that you know about. Be sure to check all guns for safety-clear chambers before working on any other. You'll never know if the gun is clear or not unless you check, so check chamber and barrel before doing any loading and forget your worries.

"Boresighting and firing-in seem to be a standard practice. *Be sure to remove the muzzle piece after finishing the boresighting.* It is guaranteed to prevent blowing up a gun and damaging the aircraft.

"Ordnance crews of the fighter and attack type aircraft have their work cut out for them in order to be designated as the representative of their coast. The competition will be keen. Good maintenance, good radar, good boresighting of guns and sights will be essential. Then it is up to the pilot."



**LOOK, MOM, NO WINGS!** And according to its designer, Dr. Alexander Lippisch, the Collins Aerodyne, a joint Navy-Army project, won't need them. Lift for VTOL vehicle comes from airflow deflected through controllable vents.

### Wiring Method Improved Expected to Increase Reliability

Chance Vought has developed a new wiring method which is designed to make electronics-packed aircraft and missiles more reliable and trouble free. The first service application of the new system will be in the F8U-2N.

Bundles of insulated wires are encased completely in a tough, rigid, compact cover of resin-impregnated fiberglass. This stick-like, hard-coating wiring harness can be molded into virtually any shape and formed to follow structural contours inside any aircraft or machine. It takes less than half the space of conventional harnesses and its weight is lower.

Since the fiberglass covering is tough, heat-resistant and can be molded into many shapes, harnesses can be used outside an aircraft, missile or space vehicle, streamlined onto the surface. The new system is expected to solve such problems as broken wires, crowded installation and chafing caused by wire bundles vibrating against the aircraft structural parts.



**TWO-TONE PAINT** job, white top with dark gray under-fuselage, wings and tail, replaces former dark blue exterior of P2V Neptunes coming off production line. New paint job, originated by Airborne Equipment Division in BuAer, gives more temperature comfort in plane.

# ANGLE OF ATTACK SYSTEM

WHAT MAY RATE a most significant aid to carrier flying has been approved recently for installation in most carrier-based aircraft.

The equipment called the "Angle of Attack System," was procured by the Navy's Bureau of Aeronautics. It is expected to make the ancient art of chasing flattops a precise, almost effortless joy for old and young alike.

The system adds to the standard cockpit instrument panel an Angle of Attack Indicator and an Approach Indexer mounted on the glare shield within pilot's line of vision. Used jointly or separately, they are guaranteed to furnish the optimum angle of attack for any airplane, in any configuration. Narrowing this last aspect to the area aft of the ramp, the groove, the average carrier pilot may now anticipate an uncanny ability to maintain the proper approach speed without constant airspeed referral and without concern for gross weight condition. In other words, the slide rule gentry have succeeded in removing the major cause for "groove groping" by taking the pilot's head out of the cockpit—this being something engineers have sought since the days of Eugene Ely.

A look at the system brings into play some of the following salient aerodynamic terms as they pertain to iron birds on the wing.

*Angle of attack*, which is frequently confused with attitude, is the angle between the mean chord of the airfoil and the relative wind or airstream.

*Relative wind* refers to the direction of the airflow relative to the aircraft, and is equal and opposite to the motion of the aircraft.

In the working trade, *angle of attack* is commonly referred to as the angular difference between the relative wind and a hypothetical fore and aft line through the fuselage rather than the chord of the wing.

*Attitude*, on the other hand, is the relation between the longitudinal axis of the aircraft and the horizontal. Note that it has nothing to do with the *relative wind*.

*Lift* and its many influences on flight calls for an explanation. The lift of an airfoil is proportional to,



and is a function of, angle of attack, and remains so until the airflow is disrupted and a stall results. For our purposes, the loss of lift which produces a stall is caused by an excessive angle of attack.

Stalls are usually associated with slow airspeed. Generally, there is a relationship between the two, but pilots know that most aircraft can be stalled at any speed from minimum to maximum. The controlling factor is the angle of attack, not the airspeed. A given airfoil always stalls at the same angle of attack regardless of aircraft weight, air density or bank angle.

With high performance jet airplanes here to stay, the good old days are gone forever. Allowable variations of 3000 pounds in airplane landing gross weight are not unusual. The pilot must vary his approach speed to maintain the same flying qualities at all landing weights. Technically, he must remember a great number of approach speeds which correspond to a similar number of landing weights. Practically, he will remember several approach speeds which correspond to specific values of fuel remaining. At best, he can only approximate the optimum value.

For example, the recommended approach airspeed of the Grumman F11F-1 Tiger varies from 129 knots at a gross weight of 14,000 pounds to 138 knots at 16,000 pounds. In the light of other pilot factors involved in a safe and correct approach, the legendary one-armed paper hanger, by comparison,

might have been regarded as being relatively unoccupied.

Once he has established his best speed estimate, other problems arise. Visual acquisition of line-up and glide path information must be interrupted frequently to check the "magic number" on his airspeed indicator. Closing rates being rather rapid these days, the vision shift procedure becomes hectic in the groove.

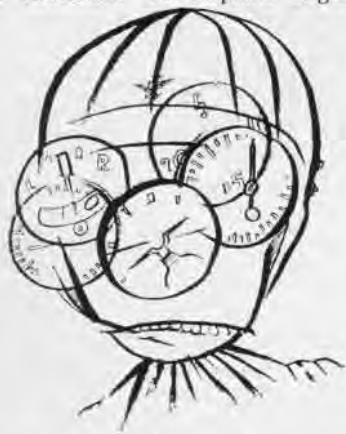
The LSO has his problems too. Almost imperceptible variations in approach attitude of today's jets mean significant airspeed changes. Since his judgment of airspeed is based on attitude, the oldtime precision is difficult to maintain. In fact, he is in the same boat with the pilot—trying to remember what airspeed goes with what weight.

To relieve the "guess" or approximation factors, BUAER started to look for a mechanical means of determining and indicating the correct angle of attack and thus establishing the correct approach speed regardless of aircraft gross weight condition. It was reasoned that this would free the pilot to concentrate primarily on the control of his aircraft while relieving the need for repeated cockpit gauge reference on final approach. The subsequent introduction of the Approach Indexer mounted on the glare shield enhanced pilot head-out-of-the-cockpit capability considerably.

The complete system consists of a transmitting probe or vane on the air-

frame, an Angle of Attack Indicator on the instrument panel, a small three-light Approach Indexer located forward in the pilot's field of view and three colored approach lights mounted so as to be visible to the LSO. A stall warning device such as a rudder pedal or stick shaker, when installed, is also considered part of the system and is operated from the Angle of Attack Indicator.

Located on the airframe where the local airflow is relatively undisturbed, usually on the nose section, the freely rotating probe seeks alignment with the airstream. As airplane angle of



attack changes, the probe rotates moving wipers on a pair of potentiometers. One provides the signal for the Angle of Attack Indicator, while the other provides fire control inputs; or in the case of the tandem seat aircraft, provides a similar signal to the indicator in the aft seat cockpit.

The Indicator is a cockpit display instrument scaled on 270 degrees from approximately 12 o'clock (high angle of attack) to a 9 o'clock (low angle of attack) position. The angle of attack which corresponds to the recommended approach speed at any gross weight is set at the 3 o'clock or index position. This sets four switches which provide overlapping action for the three lights in the Approach Indexer and also operates the three exterior approach lights. A fifth switch is available for an accessory, such as a pedal or stick shaker. A damping or steadying effect is built into the Angle of Attack Indicator which permits its use in turbulent air without giving misleading or unreadable information.

The Approach Indexer is mounted on the glare shield and through the medium of three light indications pro-

vides attitude information to the pilot during the final approach phase. The three lights, mounted vertically, present angle of attack indications on a "nose high"—"ok"—"nose low" basis. The "ok" indication is presented whenever airplane attitude is within plus or minus one-half scale unit from the index value. The overlapping feature provides combination "nose high—ok" and "nose low—ok" indications when airplane attitude is more than one-half and less than one scale unit from the index value. A single "nose high" or "nose low" indication is presented when airplane attitude is in error by more than one scale unit. In most installations, one scale unit is equivalent to approximately four knots of airspeed if the airplane is in a stabilized condition.

When the LSO sees a red approach light, the pilot sees a nose low indication on his indexer. The green approach light similarly corresponds to the nose high indexer indication. For all other indexer indications, the amber light is being presented to the LSO. This gives the pilot an edge in attitude information and an opportunity to correct for attitude errors before they become excessive.

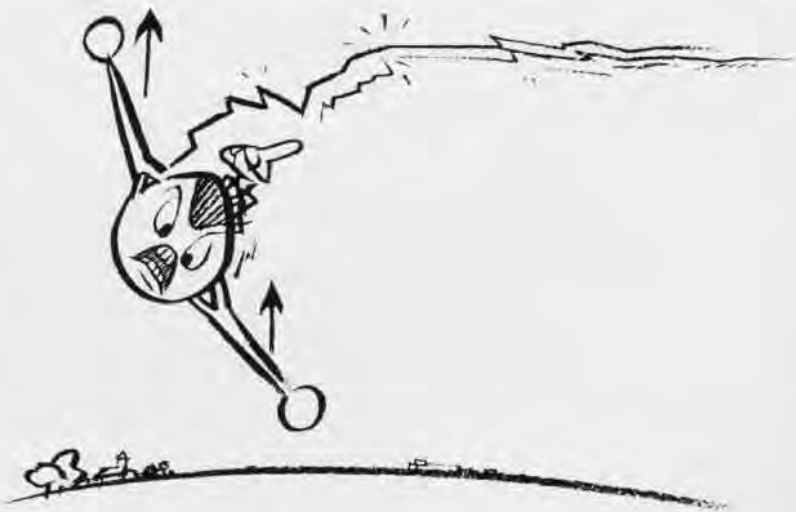
In addition to its important application for attitude control in the carrier approach, the Angle of Attack Indicator is useful in solving many other problems where a given angle of attack optimizes the maneuver, for example, the desired rotation on take-off or following catapult launch. Other examples are the angle of attack for maximum glide during a flame-out ap-

proach, and the angle of attack corresponding to stall in the clean configuration which then becomes an avoidable maneuvering limit regardless of airspeed, gross weight or "g's."

The dope on ground check procedures, inflight calibration, alignment and boresighting, and the scoop on transmitter shifting are contained in NAVAER publications AN-05-20-NB-2, AN-05-20-NB-4 and NAVAER 17-15C-515. Should the equipment arrive before the books, one warning—Be gentle with the external "probe" and keep it covered on the deck. A bent probe or a dirty one can cause erroneous indications from the transmitter.

Aircraft scheduled to receive this system and aircraft where action has been planned to correct a presently installed deficient system are as follows: VF: F8U-1, -1P, -2, -2N, F4H-1, FJ-4, -4B, F4D-1, F3H-2, -2N, F11F-1, F9F-8P; VA: A4D-2N, A2F-1, A3J-1, A3D-1, -2, -2P, -2Q; VT: T2V-1, T2J-1, F9F-8T, A3D-2T, and TT-1. Propeller aircraft include P3V, S2F-3 and W2F.

The new system should make the carrier pilot's job much easier from two standpoints. First, it removes the necessity for remembering a large number of airspeeds corresponding to a similar number of gross weights, and secondly, it lets the pilot control his attitude while keeping his head out of the cockpit, thus permitting improved glide path control. LSO's will also welcome it because of the positive airplane attitude information presented to them while the airplane is on the glide path. It should all add up to smoother and safer carrier landings.



# ASO'S NEW CENTER OPENED

THE NAVY'S new Data Processing Center has been officially opened. It is responsible for and equipped to balance inventories of some 482,000 parts needed to keep Naval aircraft around the globe in combat readiness.

The Center at the Aviation Supply Office, 700 Robbins Avenue, Philadelphia, is one of the largest EDPM installations in the Philadelphia area, and it is still growing. Within the Naval Establishment itself, the ASO's EDPM Center is the largest in the Navy system.

RAdm. James W. Boundy, Chief of the Bureau of Supplies & Accounts, opened the Center by pushing a button which started the machines in motion and at the same time played a suitable musical selection.

Heart of the center are two IBM 705 computing systems. Into its central processing units flows information from Navy Supply Points all over the world reporting current stock levels, information from CNO reporting aircraft destinations for the next several months, and information on parts requirements from maintenance officers stationed with Naval Aviation units.

The computers digest this enormous batch of facts and electronically determine the needs of each supply depot or air station for the next nine months. To accelerate the procedure even further, the Navy has installed a network of data transceivers linked by telephone lines, so that distant points can automatically create punched cards in the Data Processing Center.

"The Aviation Supply Office is one of the biggest businesses in the world, and we think one of the most efficiently run," said Capt. J. J. Appleby, ASO Commanding Officer. "With some 33,000 parts to stock for a single jet aircraft, and with 63 different types of planes in service, keeping minimum but adequate stockpiles where we need them is an enormously complex problem. Essentially the computers tell us what parts will be needed where and when."

The Navy Supply System called PURS (Program Usage Replenishment System) was first placed under computer control in 1954 when an IBM 701 was installed. This application of

the 701 by the Aviation Supply Office represented an early use of a computer for a business type function. Though this was a scientific computer, it was found adaptable to the inventory problem. In 1955 the 701 was succeeded by an IBM 702, a business-type computer. In 1957 the first 705 was installed. A second 705 was installed in the newly established Data Processing Center.

The ASO 705 computer is one of the most powerful data processing systems available. Operating according to detailed instructions called a program, the 705's electronic circuits perform a series of record-keeping, arithmetic and logical operations automatically and at speeds which make it capable of 240,000 "decisions" in 60 seconds, and of multiplying numbers as large as 1,000,000,000 at the rate of over 400 per second.

The usual means of input of data to the 705 system at the Aviation Supply Office is magnetic tape, but entry may also be effected by a punched card reader, or, when special instructions are required, from the operator's console. At the start of each processing procedure, the program is read into memory from tape or punched cards. Then the machine carries out the entire processing job without human intervention, checking itself for accuracy as it works. Results can either be printed, recorded on magnetic tape at a capacity of 5,000,000 characters per reel, or punched into cards.

One reel of tape can store the equiva-

lent of 25,000 to 50,000 cards. As many words as the complete text of "Gone With The Wind" can be duplicated from one magnetic tape to another in a little over three minutes.

## New Computer Developed Inventors Swap Ideas by Letter

Exchanging information by mail, two young officers of VAAW-35 developed a computer that may help AD pilots in special weapons delivery.

Lt. Richard B. Walls and Ltjg. Seaborn S. McGarity, Jr., began work on the computer in 1958. When Walls deployed aboard the *Bennington*, McGarity stayed ashore at North Island.

They exchanged information by mail until they reached the finished product, both working on the invention in their off-duty hours.

The computer is now being evaluated by the Pacific Fleet Nuclear Weapons Training Command at North Island.

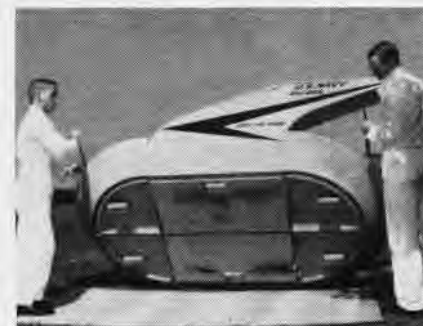
## Modernization is Ordered P5M-2's to Receive New ASW Gear

The Martin Company has been awarded a \$15,400,000 contract to modernize 28 P5M-2 *Marlin* ASW seaplanes at Baltimore. The contract is an extension of a program begun last year to modernize 85 earlier P5M-1 seaplanes.

The modernization program includes disassembly, inspection and testing of moving parts after each plane arrives in Baltimore, as well as examination and repair of the structure, and the overhaul or replacement of engines.



**SKIMMER, THE LATEST** in a series of ground cushion vehicles being developed by the U. S. Navy, is shown (L) leaving ground in recent flight. Jet stream exhausts around edge of base and high pressure air furnished by ground surface are used to form cushions upon which vehicle floats. Model above is partially powered by compressed air. Experiments will aid engineers in determining behavior of ground cushion vehicles up to several hundred feet in size flying at heights to 30 feet and at speeds up to 100 mph while carrying unusually heavy loads.





## New Fuel Tank Developed Said to Withstand a 30-G Impact

Goodyear Tire and Rubber Company has made a major advance in aircraft safety with the production of a crash-resistant fuel tank for military use, according to a company announcement.

The new tank, called the "Safety Cell," has undergone exhaustive tests in cooperation with the Federal Aviation Agency and has successfully withstood impacts exceeding 30 G's—the maximum level of human tolerance.

This means the danger of vaporized combustion at impact is reduced substantially, increasing the chance of survival after a crash.

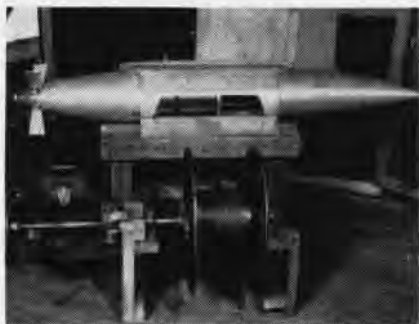
In the most recent tests, an aircraft fuel cell in a wing section simulating transport aircraft was slammed into a solid sandbag barrier at a speed approaching 100 mph. The result was a 30 G impact but the new tank, made of rubberized nylon, did not burst or shower its fuel.

In contrast, a lightweight conventional tank was smashed into the barrier at a speed which would rupture it. It shattered into more than 100 pieces.

## Tow Reel Work Made Easy Rewind Stands Built Economically

A tow cable servicing stand designed to remove or replace wire on the Del Mar Tow Reel has been built almost entirely from salvage material by Y. L. Kirchaine, AO1, of VF-13.

The framework of the stand was made of 4"x4" and 2"x4" lumber and bolted together with 3/16" bolts. The



DEL MAR REEL REWIND STAND EASY TO MAKE

motive power is furnished by a 3/4 hp, 1 phase, 1725 rpm electric motor. The drum on the tow reel is turned by a pulley assembly secured to the propeller hub by the same screws that normally hold the nose cone in place on the hub. To remove wire from the supply spool and wind it on the tow reel drum, the motor is connected to the pulley mounted on the propeller hub by means of a V pulley belt. To remove remnant wire from the tow reel drum, the motor is connected to the pulley on the wire spool shaft.

The resourcefulness of S/Sgt. R. L. Moore of VMF(AW) 114 has contributed a similar rewind stand constructed of metal and mounted on a Mk 8 Mobile Ordnance Trailer using the compressor motor as the source of power. Approximately 11,000 feet can be rewound in 30 minutes. Drawings and photographs of the rewind stands may be requested from Wing Ordnance Officer G-4, 2nd MAW, MCAS CHERRY POINT, or Ordnance Officer, VF-13, NAS CECIL FIELD, Fla.

## Space Flight Simulated Pilots Get Feel of Orbital Flight

The pilot quietly studied his instruments. His speed read 25,720 feet per second, his altitude 354,000 feet, and he could tell by his distance-to-go indicator that he had passed Cape Hatteras and was heading over the Atlantic.

Only three minutes had elapsed since his final rocket booster separated in the vicinity of Atlanta, Ga. Now his space glider was in orbit, heading around the globe toward a ticklish re-entry problem and skillful maneuvering to a landing at Dallas—around the world in less than 80 minutes.

The scene was Chance Vought Aircraft in Dallas, Texas, where pilots and engineers have made more than 200 realistic space flights in an ingenious earth-orbital, navigational flight simulator—the only one of its kind in existence.

Vought's simulator is a strong link in the research and development program which is contributing toward the company's advance in space technology.

The simulator is a reasonable facsimile of a flight vehicle cockpit tied to a room full of electronic brains. A battery of computing equipment gives the pilot instrument readings and control characteristics like those anticipated in actual flight. It can be set up to represent several types of orbital or upper atmosphere vehicles.

Vought studies have been aimed at the hypersonic gliders which can be boosted up on rockets to orbit the earth, re-enter the atmosphere on wings, and land at pre-selected points.



ESCAPE CAPSULE that encloses pilot like a protective cocoon has been designed by Republic Aviation Corporation. Left view shows mockup installation in F-105. When actuated, capsule closes and is cata-

pulted free of aircraft by twin rocket blasts within 2 seconds at speeds of 67 to 70 feet a second. Automatic devices position feet and legs, lock harnesses and crash helmet. Safe escape at Mach 3 is expected.

# LETTERS

SIRS:

One more for the record book for which we would like to be considered if space and time permit.

On our annual two week cruise at Los Alamitos in July of 1958, flying F9F-6 aircraft, the pilots and men of VF-771 flew a total of 782 hours for the period, with 21 pilots averaging about 37.2 hours per pilot which is not excessive. But get this! In that time, we qualified the squadron 91.4% combat ready including aerial gunnery, etc., with the high man, Lt. W. Wiegel, shooting 28% on his first firing hop.

All this is pretty good for a bunch of air-line pilots, engineers, students, lawyers and salesmen, considering we didn't even blow a tire. We think safety and qualifications per hour in the air is what counts; not total flight time in the age of maximum economy.

H. B. DAVIS  
LCdr., USNR-R  
Operations—VF-771

SIRS:

I received the May issue of *Naval Aviation News* and I immediately fell in love with the cover.

In all the years that I have been getting the "News" this is indeed the most beautiful picture of all.

I know what I talk about as I have hundreds of pictures and publications in my collection of Naval Aviation.

A. MAGLIOCANE

175 Elmwood Drive  
Clifton, N. J.

Your kind remarks were noted happily by our very fine Art Director, Jim Springer, who had been looking some 18 years for a wrap-around picture.



**CAPT. W. P. TANNER, Jr., C.O. of NATTU, at NAS Olathe, congratulates Suzanne L. Jackling who finished the Air Controlman "T" (Tower) Course with the biggest average for a WAVE in the entire history of the course.**

SIRS:

Regarding your article on the filming of "The Battle of the Coral Sea" in June NANews, p. 33, I detect a slight error. Having had a ringside seat during both events, let me cite:

Battle of Coral Sea—4-8 May 1942  
Sinking of the *Wasp*—15 September 1942 (somewhat after the Battle of Coral Sea). The *North Carolina* and the *O'Brien* were hit simultaneously with the *Wasp* but survived although the *O'Brien* broke up and sank on her way back to CONUS. The *North Carolina* was able to immediately speed up to 25 kts. and clear the area in the wake of *Hornet* (CV-8) on which I sat. (A spread of fish had also narrowly missed the *Hornet*.) All of this was bagged by (I think) only one sub, which got away. This occurred in almost the exact spot at which the *Sara* had been hit two weeks earlier as I sat on the forecandle watching her—and watching the wakes of two torpedoes which passed under the bow of the *Hornet*. As you know, *Hornet* finally got hers on 27 October 1942 at the Battle of Santa Cruz.

Yours for bigger and better "fish" stories.

I. L. SWOPE, CDR.  
OPNAV

SIRS:

I would like to call to your minds a mistake in the June 1959 issue of *Naval Aviation News*. On p. 33 there is a paragraph concerning a T-28 *Trojan* painted in Japanese colors due to the necessity of a film with one in action.

Below this it said that the pilot who flew it was on the *Wasp* when it was sunk by a submarine at Coral Sea. The *Lexington* was the aircraft carrier lost at the Coral Sea. Furthermore, the *Wasp* was sunk at Guadalcanal by Japanese submarines.

I am 14 years old and I enjoy *Naval Aviation News* very much.

WILLIAM NIEMAN

1736 Baltimore Avenue  
Cincinnati 25, Ohio

★ ★ ★

★

## EDITOR'S NOTE

It will be of some interest to our readers that the last picture on the story of the *Independence* (p. 19) contains several items of significance. As benefits the name of the carrier, a flag is included, and the number of the aircraft—4—celebrates Fourth of July, while the last two digits—13—signify the number of the original colonies. It's one picture we were bound to run, for we think that in honor of *Independence Day*, it was appropriate to pose an A4D this way.

## ● IN THIS ISSUE

Antisubmarine Warfare....	6
Midshipmen's Cruise .....	11
Fire Control Analyzed.....	12
Independence, CVA-62 ....	15
CVA-42 .....	20
WAVE Headed for NATO..	24
Reserves in Slam-ex.....	26
VU-6 Target Service.....	30
Maintenance at Iwakuni ..	33
Angle of Attack .....	36

*Use of funds for printing this publication has been approved by the Director of the Bureau of the Budget, 10 Feb. 1959.*

## ● COVER

This hard-to-shoot angle view of an FBU-2 Crusader was achieved by an ace photographer well known to the News: none other than the former editor (1943-54), LCdr. Arthur L. Schoeni, now a member of the public relations staff of Chance Vought Aircraft.

## ● SUBSCRIPTIONS

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VF-103

## SQUADRON INSIGNIA

The cruise is over, but the memory of the months in the Mediterranean will remain with the men of Fighter Squadron 103. Embarked in USS Forrester, the Supersonic Sluggers flew more than 1600 sorties for a total of about 2500 hours in the F8U-1 Crusader. Led by Cdr. M. P. South, the members of VF-103 also served as good will ambassadors in the many ports of call. The photographs of four F8U's flying high above CVA-59, of the squadron pilots, of the formation underway on the voyage home, tell part of the history of Fighting 103's 1958-59 deployment.





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